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ABSTRACT

The purpose of this research was to explore the relationships between Machiavellian orientations of elementary and secondary school principals and aspects of teacher-principal relations. Data were collected from faculty members and principals in 40 elementary and 40 secondary schools in New Jersey. A set of hypotheses and research questions was tested using analysis of variance and correlational techniques. The Machiavellian orientation of principals was not significantly related to the prinicpal's behavior in terms of initiating structure, consideration, authoritarianism, emotional detachment; nor was it related to openness (or closedness) of school climate, teacher loyalty to the principal, teacher loyalty to the school, or teachers' rating of the effectiveness of the principal. Machiavellianism of principals, however, was found to be significantly related to job mobility. Contrary to the findings of the experimental research on Machiavellianism, the expected relationships between Machiavellian orientations of principals and teacher-principal interactions were generally not found in the school setting. (Author)

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MACHIAVELLIANISM IN THE SCHOOL SETTING: TEACHER-PRINCIPAL RELATIONS

Wayne K. Hoy
with
Robert Black
Lawrence Kanner

Department of Educational Administration
and Supervision
Graduate School of Education
Rutgers University
New Brunswick, New Jersey

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September, 1973

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CHAPTER I

INTRODUCTION

Administration is power. The administrator has at his disposal an elaborate and wide variety of organizational procedures and mechanisms designed to induce members to comply with directives. Hard decisions have to be made--decisions which have negative consequences for some of the members. The way administrators make those decisions and use the formal authority of the organization to guarantee performances which are in accord with organizational specifications has been a classic problem in organizational analysis.

Secondary and elementary school principals are administrators charged with the responsibility of coordinating and integrating activities in public schools. In this administrative role, the school principal exercises power, authority, and leadership. He is in the position of giving order to those activities in the school that are designed to achieve the goals of the institution within the setting of the school system and within the broader context of the community at large. His power, in Russell's terms, is seen as the production of "intended effects."[1] The principal finds himself in a role in which he is primarily concerned with making decisions and/or establishing a framework and the machinery for decision-making and implementation. There seems to be little doubt that the school principal wields considerable power as he exercises his administrative authority.

Need and Purpose of the Study

One of the earliest systematic analyses of administration and power was Machiavelli's classic, The Prince, first published in 1532. Lerner, writing in the introduction to the Modern Library version of The Prince, says of Machiavelli,

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[1]Bertrand Russell, Power - A New Social Analysis (New York: Norton, 1938), p. 35.

> . . . He had the clear-eyed capacity to distinguish between man as he ought to be and man as he actually is - between the ideal form of institutions and the programatic condition under which they operate.[2]

The language of how things actually are is a language of power, of how men are cajoled and compelled to do the bidding of other men.[3] The fact that many of Machiavelli's keen and insightful observations have continued to live for nearly five hundred years is a testimonial to the effectiveness of tactics that are sound and based on a realistic knowledge of behavior. The difference between administrative behavior during Machiavelli's time and today is largely one of degree, but feelings and needs for power and actions to control the behavior of others follow remarkably similar paths.[4]

One does not read Machiavelli without thinking of, at least, a few administrators who seem to embody Machiavelli's ideas on power and manipulation of other people. Until fairly recently, however, the concept of Machiavellianism had received little systematic empirical investigation.[5] In fact, there have been few, if any, empirical investigations focusing on Machiavellianism in public school administrators. Perhaps, the reason for this apparent void rests with the pejorative connotation of the term; it has come to denote the use of cunning, opportunism, and dishonesty in interpersonal relations. Calhoon speculates on the reasons for the neglect of the study and analysis of Machiavellian concepts in the modern organizational literature as follows:

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[2]Max Lerner, "Introduction," in Niccolo Machiavelli, The Prince and The Discourses (New York: Modern Library, 1950), p. xxxii.

[3]Daniel Griffiths, Administrative Theory (New York: Appleton-Century-Crofts, Inc., 1959), p. 3.

[4]Richard P. Calhoon, "Niccolo Machiavelli and the Twentieth Century Administrator," Academy of Management Journal, XII (June, 1969), pp. 206-210.

[5]Richard Christie and Florence L. Geis, Studies in Machiavellianism (New York: The Free Press, 1970).

> Emphasis on "good practices" and "principles" of management on the one hand have tended to obscure the action of leaders that are unsavory but effective. On the other hand, the prevailing connotation of "Machiavellian" as conniving, manipulative, cold-blooded means for arriving at selfish ends has completely overshadowed the need for and validity of his concepts.[6]

One might argue, though, that authoritarianism and Machiavellianism are essentially the same and that authoritarianism, as defined in The Authoritarian Personality and measured by various versions of the F-scale, is probably one of the most frequently studied variables. However, the research evidence to date supports neither the view that the concepts are the same nor that they are significantly related to each other.[7] Machiavellians are not necessarily authoritarian personalities. Indeed, one of the assumptions concerning the Machiavellian is that he is essentially apolitical in an ideological sense and views others in a cool, rather than a moralistic, judging fashion.

It is difficult to be objective about the term Machiavellianism; however, the concept does seem to be an important aspect of power relations in formal organizations. With respect to the problem of objectivity, Christie and Geis comment:

> We have been plagued, however, by the problem of objectivity . . . Initially our image of the high Mach was a negative one, associated with shadowy and unsavory manipulations. However, after watching subjects in laboratory experiments, we found ourselves having a perverse admiration for the high Mach's ability to out do others in experimental situations . . . This does not mean that our admiration was unqualified; it might better be described as selective . . . we certainly do not have the same visceral reactions to the term "Machiavellianism" that we had earlier.[8]

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[6]Calhoon, op. cit., p. 205.

[7]Christie and Geis, op. cit., pp. 38-49.

[8]Ibid., p. 339.

Despite the negative connotations of the term, there is reason to believe, as Calhoon points out, that modern organizational leaders operate much more according to the various teachings of Machiavelli than anyone might care to admit. As he so aptly stated, "Machiavellian concepts and actions are much more germane to the 'guts' of interactions . . . than social scientists and/or management analysts care to recognize."[9] Further, he indicates that current analysts of behavior in management are coming to see that "systems" at one end and the case studies of individual managers at the other are inadequate and that journal articles and books on management are, in increasing numbers, referring to the strategies used in leadership.

In brief, Machiavellianism appears to be a potential theoretically significant concept mediating superior-subordinate relationships in the public school context but one for which there is little empirical study. The purpose of the present research is to begin to explore Machiavellianism in public school administrators. More specifically, the investigation will focus on relationships between Machiavellianism of elementary and secondary school principals and certain aspects of teacher-principal interactions.

Conceptual Reference

In order to understand more clearly the descriptions and propositions which will be explained in this study, it is necessary to define the basic concepts which will be utilized in the analysis. Reference will be made to Machiavellianism, organizational climate, open climate, closed climate, initiating structure, consideration, authoritarianism, emotional detachment, loyalty to the institution, and loyalty to the principal. A working definition for each of these terms, as they will be used in this study, appears in the paragraphs which follow. Further expansion of the major concepts will occur in the review of literature in the next chapter.

Machiavellianism

The central concept under investigation is Machiavellianism; it may be conceived in terms of a

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[9]Calhoon, loc. cit.

hypothetical role model.[10] This model would have those abstract characteristics which mark the Machiavellian as effective in controlling others. He might be referred to as the "operator" or "manipulator" who would have little emotional attachment to those with whom he works, view others as objects to be manipulated, and want to influence rather than be influenced. Machiavellians also tend to be utilitarian in their actions rather than moral and also tend to have an objective view of reality. Further, they focus on getting things done rather than on long range goals. In brief, the Machiavellian is characterized by a relative lack of affect in interpersonal relations, a lack of concern with conventional morality, a lack of gross psychopathology, and a low ideological commitment. "High Machs" and "low Machs" will be used to designate those imbued with high and low degrees of Machiavellian orientation.

Organizational Climate[11]

The organizational climate of a school may be construed as the organizational "personality" of a school. Figuratively, "personality" is to the individual what climate is to the school. More specifically, the climate of a school refers to patterns of teacher-teacher and teacher-administrator interactions. Organizational climates of educational organizations have been arrayed along a continuum defined at one end by the open climate and at the other by a closed climate. Concern in this study will focus on these two contrasting types of climate.

Open Climate

The model of the open climate is portrayed as an energetic, lively organization which is moving toward its goals while, simultaneously, providing satisfaction for the group members' social needs. Leadership acts

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[10] Christie and Geis, op. cit., pp. 3-4.

[11] For a further discussion of organizational climate, including open and closed climates, see Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Chicago: Midwest Administration Center, University of Chicago, 1963).

emerge from both the teachers and the principal. Neither task-achievement nor social-needs satisfaction is overemphasized, but in both instances satisfaction seems to be obtained easily and almost effortlessly. The basic characteristic of the open climate is the "authenticity" of behavior that occurs among the teachers and principal.

Closed Climate

The prototype of the closed climate is the school which is characterized by a high degree of apathy among the teachers and principal. Morale is low. Little satisfaction is obtained with respect to either task-achievement or social-needs. The behavior of teachers and the principal is primarily "inauthentic," and the organization is stagnant.

Leadership Behavior[12]

Leadership behavior refers to the "behavior of leaders," more specifically, in this study, the behavior of elementary and secondary principals. Several dimensions of leader behavior will be considered in this analysis. They include initiating structure, consideration, authoritarianism, and emotional detachment.

Initiating Structure

Initiating structure refers to activities of the principal which define patterns of organization, determine channels of communication, delineate appropriate procedures, emphasize goal achievements, and stress the effective operation of the organization.

Consideration

Behavior of principals which is indicative of friendship, trust, respect, warm and interpersonal relations, and which is primarily concerned with subordinate welfare and group maintenance is termed consideration.

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[12]For further discussion of leadership behavior and initiating structure and consideration, see Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), pp. 81-130.

Authoritarianism

Although there are many definitions of the term "authoritarianism," for the purpose of this study, the definition proposed by Blau and Scott served as our reference. An authoritarian superior is one who has strong tendencies to be strict rather than lenient, to supervise closely, to have a formal approach to teachers, and to stick closely to rules and procedures.[13]

Emotional Detachment

As used in this study, the concept refers to the principal's ability to remain calm and rarely, even in difficult situations, lose his temper and "blow up" at subordinates.[14]

Loyalty to the Institution

This variant of loyalty refers to the extent to which teachers feel a commitment to the school in which they are working. It does not attempt to assess the extent of commitment to the school system as a whole but refers to the identification with the school.

Loyalty to the Principal

Another variant of loyalty to be studied is loyalty to the principal. Here, the emphasis is on the extent to which subordinates are committed to the principal; "that is, the degree to which he is 'liked,' 'accepted,' 'trusted,' and 'respected.'"[15]

The Problem

The role of the school principal is becoming increasingly more complex. As teachers have become better educated, more organized as a group, and more militant, the traditional role of the principal as the

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[13] Peter Blau and W. Richard Scott, Formal Organization (San Francisco: Chandler Publishing Co., 1962), pp. 148-149.

[14] Ibid.

[15] Ibid., p. 144.

unquestioned leader in the school building has been challenged. Teachers demand more authority and voice in decision-making and policy formulation. The importance of healthy principal-teacher relations and the growing significance of leadership in the informal organization as well as in the formal structure of the school provide most public school principals with a major challenge.

Under these general conditions, what kind of principals are successful in building rapport and sound interpersonal relations with their faculties? The significance of Machiavellian tactics in present day management and administrative practices has been alluded to earlier. In addition, although the empirical research on Machiavellianism in administrators has been largely neglected, the body of experimental research on Machiavellianism has indicated that those subjects who agree with basic Machiavellian tactics, strategies, and ideas behave differently than those who do not.[16] This research evidence has indicated that, in general, those with a high Machiavellian orientation, high Machs, manipulate more, win more, are persuaded less, and persuade others more than low Machs. In addition, high Machs initiate and control the social structure of mixed-Mach groups. They tend to be preferred as partners, chosen and identified as leaders, judged as more persuasive, and appear to direct and control both the tone and content of the interaction.

Finally, the experimental evidence to date suggests that high Machs are not more hostile, vicious, or vindictive when compared to low Machs. Additionally, the low Machs' more personal orientation tends to make them less effective as strategists in the course of interaction but probably more sensitive to others as individual persons.[17] Again, these findings are those of the laboratory. Do the same kind of findings hold in the real world? To what extent does a Machiavellian orientation mediate the behaviors of public school principals? The specific research questions which guided this study are sketched below.

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[16]Most of the experimental research, however, has used college students as subjects. For an excellent summary of many of these studies see Christie and Geis, op. cit.

[17]Ibid., p. 144.

What kind of leader behavior do Machiavellian school principals exhibit? This question provided one general thrust of the study. Halpin's[18] work with initiating structure and consideration as fundamental dimensions of leader behavior afforded a useful perspective for exploring the differences in behavior between "high Machs" and "low Machs" in the school setting. Given the initiating and control dispositions of high Machs, it seems reasonable to expect them to be high on initiating structure. However, research on leadership effectiveness suggests that the effective administrator is high on both consideration and initiating structure.[19] To what extent are Machiavellian principals described by their teachers as high on both dimensions of leadership?

Although the evidence to date indicates that the authoritarian personality and Machiavellianism are not related,[20] there has been no similar exploration of the relationship between Machiavellianism and authoritarian administrative behavior. Research does indicate that authoritarian principals are less successful than non-authoritarian ones.[21] Given the explicit, cognitive definitions of the situation and the focus on strategies of "winning" which imbue high Machs, it seems appropriate to examine the extent to which Machiavellian principals are described by their faculties as authoritarian and non-authoritarian.

A body of research is also beginning to emerge which underscores the importance of emotional detachment of superiors as they deal with subordinates.[22] The

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[18]Halpin, op. cit., pp. 81-127.

[19]Andrew W. Halpin, The Leadership Behavior of School Superintendents (Columbus, Ohio: College of Education, The Ohio State University, 1956).

[20]Christie and Geis, op. cit., pp. 38-39.

[21]Richard T. Rees and Wayne K. Hoy, "The Principal and Teacher Loyalty," Research Bulletin, Rutgers University, Graduate School of Education (Fall, 1971), pp. 4-8.

[22]Blau and Scott, op. cit., See also Wayne K. Hoy and Leonard B. Williams, "Loyalty to Immediate Superior at Alternate Levels in Public Schools," Educational Administration Quarterly, VII (Spring, 1971), pp. 1-11.

research on the detachment of Machiavellians leads one to predict that high Mach principals will have significantly more emotional detachment than their low Mach counterparts.

What kind of faculty reactions do Machiavellian principals generate? It might be assumed that due to the negative reactions many individuals have about "manipulating people," Machiavellian administrators might tend to alienate subordinates. On the other hand, there is evidence that, at least in experimental face-to-face situations, high Machs are preferred as partners, chosen and identified as leaders, and judged as more persuasive than low Machs.[23] With respect to faculty reaction, this research will focus on loyalty to the administrator, loyalty to the school, openness of climate, and a global rating of effectiveness.

Blau and Scott[24] maintain that a crucial aspect of a superior's ability to exert influence is the loyalty and support he commands among group members. In fact, it has been suggested that subordinate loyalty to the immediate superior may be a necessary condition for leadership effectiveness in a school setting.[25] To what extent do Machiavellian principals command loyalty from their faculties?

Loyalty to the school organization is another variable which will be explored with respect to Machiavellian administrators. A basic problem facing all organizations is the need to integrate the needs of the individual and the goals of the organization. Tightening the links that bind one to an organization so that he is dedicated to the organization and its goals is functional to the effective operation of most organizations.[26] To what extent are Machiavellian principals able to provide an atmosphere conducive to faculty loyalty to the school?

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[23]Christie and Geis, op. cit., pp. 304-313.

[24]Blau and Scott, op. cit., pp. 162-164.

[25]Hoy and Williams, op. cit., p. 11.

[26]Douglas T. Hall, (et. al.), "Personal Factors in Organizational Identification," Administrative Science Quarterly, XV (June, 1970), pp. 176-178.

Another faculty variable to be examined with respect to Machiavellians is school climate.[27] Machiavellians are expert at manipulating people, but to what extent can they manipulate the climate of a school? What is the relationship between Machiavellianism in principals and the openness or closedness of school climates?

The final variable used to tap faculty reaction to Machiavellianism on administrators is the teachers' global rating of the principal's effectiveness. What is the relationship between teacher rating of principal effectiveness and Machiavellianism?

Two other research questions will also be analyzed:

--Is there a significant difference between the Machiavellianism of elementary and secondary principals?

--Is there a relationship between administrative experience and Machiavellianism?

The above questions are ones which provided the impetus for this research. In the next chapter these questions will be refined and, where it seems appropriate, specific research hypotheses developed.

Research Significance

This research is admittedly exploratory in nature. The study of Machiavellianism in public school administrators is virtually non-existent; hence, this initial probe may lack some of the theoretical rigor that one might find in more frequently studied aspects of organizational behavior. Nonetheless, the concept of Machiavellianism itself appears to be a theoretically significant one which may have broader implications for leadership theory, exchange theory, and organizational analysis. The study may also provide practical as well as theoretical value. For example, the knowledge produced may furnish some clues in terms of developing strategies for opening the organizational climate of schools and for improving principal-teacher relationships.

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[27] Andrew W. Halpin, Theory and Research in Administration (New York: The Macmillan Co., 1966), p. 206.

Scope and Limitations

The sample in this study was composed of forty elementary and forty secondary schools in New Jersey. An attempt was made to secure a widely diverse sample in terms of school size, location, and socio-economic level of the region served. The characteristics of the schools in the sample are presented in Appendix A.

The hypotheses of this study do not attempt to establish an antecedent-consequence relation between the variables. Although the variables are hypothesized to be related to each other, the degree of casual relationship is not clear. Generalizations supported by the findings should be limited to the population sampled or applied cautiously to similar population.

CHAPTER II

REVIEW OF THE LITERATURE, RATIONALE AND HYPOTHESES

The theory and research findings presented in this chapter deal with the major concepts explored in the present study. In addition, the theoretical rationale of the study was developed, and the hypotheses and questions which guided the study were presented.

Machiavellianism

Historical and Conceptual Perspectives

There is little one can say for certain about the early years of Niccolo Machiavelli (1469-1527). His father was a lawyer, and his boyhood apparently must have been similar to that of most children living in the city of Florence at the time.

He entered politics at the age of twenty-nine as secretary to the Florentine republic, a post he held for fourteen years. During that period, he was sent on diplomatic missions that gave him a variety of personal acquaintances with people such as Cesare Borgia, Louis XII of France, and the Emperor Maximilian. After the restoration of the Medici in 1512, Machiavelli was accused of conspiracy and imprisoned. Following his imprisonment, he spent the latter part of his life at San Casciano devoting much of his time to study, to writing, and to seeking re-entry into public life; it was during this period that he wrote The Prince and The Discourses.

The Prince is, in essence, a handbook on war, power, manipulation, conquest, and government. Its precepts are pragmatic, based upon ruthless realism as revealed by experience and by history. The prescriptions and duplicity recommended throughout the book were directed to the end of a united Italy.

Machiavelli admired power. He believed in fighting evil with evil. To be effective, Machiavelli claimed the prince must lie and cheat and even disavow his religion whenever doing so was advantageous to the state; however, none of these things should be done

needlessly. Thus, while Machiavelli is not the faithful friend of morality, he is at least not opposed to it unless it gets in his way.[1]

The Discourses is a much more comprehensive book than The Prince. In it, Machiavelli sought to describe his whole system of politics. It is here that Machiavelli developed and elaborated upon such ideas as democratic republics, reliance on mass consent, the unity of the state, and the role of power and leadership in achieving political stability. Nonetheless, when one speaks of Machiavellianism, it is The Prince that one usually has in mind.

Machiavelli was a "bureaucrat." He wrote about politics because he had had first hand experience in it; he was in a position that allowed him to become one of the first modern analysts of power and administration.

His works stand out because they represent a revolution in political thinking. As Max Lerner says,

> The humanists who had written books about princes had written in the idealistic and scholastic medieval tradition; they were ridden by theology and metaphysics. Machiavelli rejected metaphysics, theology, idealism. The whole drift of his work is toward a political realism, unknown to the normal writing of his time.[2]

Machiavelli recognized the existence of power politics and subjected it to systematic analysis. Hence, his name has, through time, become associated with, if not synonymous with, power and manipulation. He sought to differentiate the realm of what ought to be from what is, focusing his attention on the latter.

Machiavelli would probably applaud the widespread application of his precepts of leadership in organizations today; however, the pejorative connotation of

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[1]Burton A. Milligan, Three Renaissance Classics (New York: Charles Scribner's Sons, 1953), pp. iii-vii.

[2]Max Lerner, The Prince and The Discourses by Niccolo Machiavelli (New York: The Modern Library, 1940), p. xxxi.

the term Machiavellianism has no doubt led to its being "down played" in organizational analysis. As Prezzolini remarked, "I think that the unpleasant but realistic picture of politics that Machiavelli saw in his reading of history and formulation into a science is the principal reason for the aversion in which he is generally held. No one likes to be told of shortcomings."[3]

Since the publication of The Prince in 1532, the name Machiavelli has come to signify the use of cunning, deceit, and blatant opportunism regarding interpersonal relations. Traditionally, the "Machiavellian" is viewed as one who manipulates others for his own ends and purposes.[4]

Other conceptualizations of Machiavellian behavior are abundant. As Calhoon states, "According to the 1964 edition of Webster's Unabridged Dictionary, Machiavellianism is characterized by shrewdness rather than by interest in an individual's welfare."[5] A definition of a modern Machiavellian administrator is one who employs ". . . aggressive, manipulative, exploiting, and devious moves in order to achieve personal and organizational objectives."[6] Further, these moves are actuated in terms of their feasibility with secondary consideration to the feelings and needs of others.

In conceptualizing the construct Machiavellianism, Christie and his associates viewed the Machiavellian manipulator or operator in terms of a hypothetical role model. They identified the following four basic abstract characteristics that they hypothesized would be necessary for the effective manipulation of others:

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[3]Guiseppe Prezzolini, "The Kernel of Machiavelli," The National Review, X (April 8, 1961), p. 217.

[4]Richard Christie and Florence L. Geis, Studies in Machiavellianism (New York: Academic Press, 1970), p. 1.

[5]Richard P. Calhoon, "Niccolo Machiavelli and the Twentieth Century Administrator," Academy of Management Journal, XII (June, 1969), pp. 210-211.

[6]Ibid., p. 211.

1. A relative lack of affect in interpersonal relationships. It was assumed that success in getting others to do what one wishes them to do would be improved by viewing them as objects to be manipulated rather than persons with whom one has empathy.

2. A lack of concern with conventional morality. It was postulated that those who manipulate have an utilitarian rather than a moral view of their interactions with others.

3. A lack of gross psychopathology. It was hypothesized that the manipulator would take an instrumentalist or rational view of others. This contact with the more objective aspects of reality would be within the normal range.

4. Low ideological commitment. It was assumed that successful manipulation was based upon getting things done rather than a focus upon long-range ideological goals.[7]

Specific items used to construct an operational measure for this hypothetical concept were gleaned primarily from Machiavelli's The Prince and The Discourses. In sum, Machiavellians are lacking in interpersonal affect, low in concern with conventional morality, devoid of gross psychopathology and have low ideological commitment. The present research used the preceding conceptual role model of Machiavellianism.

Empirical Findings

There have been a number of empirical investigations examining the effects of Machiavellianism within a group situation. In a study relating Machiavellianism to attitudes toward teammates in a cooperative rating task, Harris found that high Machs[8] were more independent and more sensitive to manipulative traits

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[7]Christie and Geis, op. cit., pp. 3-4.

[8]High Machs are persons who score relatively high on the Mach Scale, as developed by Richard Christie and his associates. Low Machs are persons who score relatively low on the Mach Scale.

in their teammates.[9] Further, high Machs were more reserved and neutral in rating the performance of their teammates.

In a study of four-person groups, Geis found that high Machs were chosen as group leaders significantly more frequently than low Machs.[10] In addition, she reported that in groups where high Machs were leaders, the group made higher grades on their joint projects than individual members made on course exams.

Desfosses studied the effects of Machiavellianism on group productivity.[11] His findings confirmed the hypothesis that high Mach groups are more productive than low Mach groups.

Bochner's study of task structure in four-man groups revealed that tasks significantly affect high Machs but do not significantly affect low Machs.[12] Further, he found that there are strong pre-dispositional differences between high and low Machs in both interaction and rating behaviors.

Hacker and Gaitz conducted a study of Machiavellianism in a ten-member mental health team.[13] They

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[9]Thomas M. Harris, "Machiavellianism Judgment Independence, and Attitudes Toward Teammates in a Cooperative Rating Task" (unpublished Doctoral dissertation, Columbia University, 1966).

[10]Florence Geis, "Machiavellianism in a Semireal World," Proceedings of the 76th Annual Convention of the American Psychological Association, III (1968), pp. 407-408.

[11]Louis R. Desfosses, "Some Effects of Machiavellianism and Change of Leaders on Group Productivity" (unpublished Doctoral dissertation, University of Massachusetts, 1971).

[12]Arthur P. Bochner, "A Multivariate Investigation of Machiavellianism and Task Structure in Four-Man Groups" (unpublished Doctoral dissertation, Bowling Green State University, 1971).

[13]Charles M. Gaitz and Sally L. Hacker, "Interaction and Performance Correlates of Machiavellianism," Sociological Quarterly, XI (Winter, 1970), pp. 94-102.

wanted to investigate the extent to which persons with a Machiavellian approach favored certain styles of interaction. Results indicated that high Machs contributed more to small group discussion, made more suggestions for action, and made greater use of negative socio-emotional interaction. These techniques were effective in small groups but were less effective in larger group situations.

Uejio and Wrightsman, reporting on Machiavellianism as related to cooperative behavior, indicated a significant negative correlation between Mach scores and cooperation scores for Caucasian females.[14]

Summarizing these studies of Machiavellianism in a group setting, it appears that high Machs are chosen as leaders more often than low Machs. Further, being more task oriented, they exert a significantly greater influence on group activities than low Machs.

Other studies of Machiavellianism have centered around its effects as a behavioral determinant in gaming and negotiating situations. Geis' study of Machiavellianism in bargaining-coalition games showed that high Machs won far more points in the games than low Machs.[15] It was further demonstrated that the advantage of the high Mach over the low Mach was enhanced with the increasing ambiguity in the situation.

In a study involving children and bluffing games, Nachamiet found that high Machs won significantly more games than low Machs.[16] Wahlin's research dealing with Machiavellianism and mathematical games revealed that high Machs made significantly more competitive moves

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[14]Clifford K. Uejio and Lawrence S. Wrightsman, "Ethnic-Group Differences in the Relationship of Trusting Attitudes to Cooperative Behavior," Psychological Reports, XX (April, 1967), pp. 563-571.

[15]Florence L. Geis, "Machiavellianism in a Three-Person Game" (unpublished Doctoral dissertation, Columbia University, 1964).

[16]Susan S. Nachamiet, "Machiavellianism in Children: The Children's Mach Scale and the Bluffing Game" (unpublished Doctoral dissertation, Columbia University, 1969).

than did the lows.[17] Thus, it appears that high Machs are more competitive and win more in gaming situations than low Machs.

Some researchers have examined the relationship of Machiavellianism to grade averages in college. Data gathered by Singer, in an attempt to determine if Machiavellian attitudes are related to higher grade averages in college, revealed a partial correlation of Machiavellianism with grades.[18] Interestingly, he found that first born children have higher mean scores on the Mach scale, yet they have consistently lower Mach-grade point correlations. He speculated that these children do not have the skills of putting their beliefs into practice.

Burgoon discovered a significant positive relationship between Machiavellianism and success (as measured by final grades) in communications courses.[19] As hypothesized, this relationship did not hold true in public speaking courses. Marks and Lindsay investigated Machiavellian attitudes and found that there was a reliable relationship between high Mach scores and high grade point averages.[20] These studies indicate that there is a positive relationship between high Machiavellianism and high grade averages.

Machiavellianism has been viewed for its possible effects in role-playing situations. Jones, Davis, and

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[17]William S. Wahlin, "Machiavellianism and Winning or Losing Mathematical Games" (unpublished Doctoral dissertation, Columbia University, 1967).

[18]Jerome E. Singer, "The Use of Manipulative Strategies: Machiavellianism and Attractiveness," Sociometry, XXVII (June, 1964), pp. 128-150.

[19]Michael Burgoon, "The Relationship Between Willingness to Manipulate Others and Success in Two Different Types of Basic Speech Communication Courses," Speech Teacher, XX (September, 1971), pp. 178-183.

[20]Carl A. Lindsay and Edmond Marks, "Machiavellian Attitudes: Some Measurement and Behavioral Considerations," Sociometry, XXIX (September, 1966), pp. 228-236.

Gergen, in a study of role-playing variations, found that high Machs rated the role-consistent interviewers as more intelligent than those giving role-inconsistent responses.[21] Low Machs, on the other hand, showed the reverse pattern.

Epstein's study of persuasibility and Machiavellianism expanded earlier research in that low Machs showed greater opinion change in the role-playing condition than did high Machs.[22] High Machs, however, changed more than low Machs following "factual" arguments.

Jones and Daugherty, in a study of political orientation and anticipated interactions, found that the higher Machs flattered the political stimulus person less than low Machs when competitive interaction was anticipated.[23] Further, they reported results which indicated that, as predicted, the higher the subjects score on the Mach Scale, the more negative the evaluation of the political stimulus person when interaction was anticipated. Oksenberg found that, consistent with prior research, high Machs were less easy to persuade without justification than low Machs.[24] It would appear that high Machs are less affected in a role-playing situation. They change more following "factual" arguments.

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[21]Keith E. Davis, Kenneth J. Gergen, and Edward E. Jones, "Role Playing Variations and Their Informational Value for Person Perception," Journal of Abnormal and Social Psychology, LXIII (September, 1961), pp. 302-310.

[22]Gilda F. Epstein, "Machiavelli and The Devil's Advocate," Journal of Personality and Social Psychology, XI, No. 1 (1969), pp. 38-41.

[23]Edward E. Jones and Boice N. Daugherty, "Political Orientation and the Perceptual Effects of an Anticipated Reaction," Journal of Abnormal and Social Psychology, LIX (November, 1959), pp. 340-349.

[24]Lois E. Oksenberg, "Machiavellianism and Organization in Five Man Task-Oriented Groups" (unpublished Doctoral dissertation, Columbia University, 1968).

In studying Machiavellianism and interpersonal bargaining, Lake concluded that while persons form impressions in very similar ways, the expectations thus created interact with one's Machiavellian orientation in such a way as to produce quite different behavioral responses within a bargaining situation.[25] For example, he found that low Machs respond to aggression with defensive behavior whereas high Machs tended to respond with counter-aggression.

Campbell, in a study of Machiavellianism in a bargaining experience, reported that high Machs actively control structure in a manipulative manner.[26] Further, high Machs were better able to establish credible threats than low Machs.

The effects of Machiavellianism on individual behavior in situations involving elements of dissonance have been examined. Epstein reported data regarding Machiavellianism and dissonance which revealed, as predicted, that low Machs showed more opinion change following role playing while high Machs showed more opinion change in the non-role playing condition.[27]

Bogart's study of cognitive dissonance demonstrated significant differences between high and low Machs' responses to cognitive inconsistency.[28] High Machs were more successful in avoiding the inconsistent behavior, which operationally defined dissonance, than low Machs.

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[25]Dale G. Lake, "Impression Formation, Machiavellianism and Interpersonal Bargaining" (unpublished Doctoral dissertation, Columbia University, 1967).

[26]Alan S. Campbell, "Machiavellianism, Bargaining Experience and Bargaining Advantage: A Study of a Conversational Game" (unpublished Doctoral dissertation, Columbia University, 1971).

[27]Gilda F. Epstein, "Machiavellianism, Dissonance and the Devil's Advocate" (unpublished Doctoral dissertation, Columbia University, 1966).

[28]Karen Bogart, "Machiavellianiam and Individual Differences in Response to Cognitive Dissonance" (unpublished Doctoral dissertation, New York University, 1968).

Hymoff, in an investigation of Machiavellianism in relation to guilt and compliance, found that, as hypothesized, low Machs experienced a greater level of guilt regarding cheating.[29] Furthermore, high Machs were more suspicious and questioning regarding the purpose of the research than low Machs.

Jones, Gergen and Davis, in research concerned with reactions to being approved or disapproved as a person, found significant interaction between Mach scores and changes in self-reports after initial negative feedback.[30] High Machs were relatively unaffected, while lows changed significantly more in the direction of giving positive self-descriptions after having had a negative evaluation of their personality.

Feldman and Scheibe reported on the determinants of dissent in a psychological experiment.[31] In the study, dissent was defined as actually leaving an experiment before completing a designated task. Results showed that those who dissented scored significantly higher on the "Machiavellian Tactis" scale than the non-dissenters (the scale reflects the endorsement of lying, flattery, and deception in interpersonal behavior).

When relating Machiavellianism to redressing distributive injustice, Blumstein and Weinstein found that low Machs rewarded the worthy and punished the undeserving about equally.[32] However, high Machs opportunistically took points from partners slow in claiming

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[29]Ira H. Hymoff, "An Experimental Investigation of the Relationship of Machiavellianism to Guilt and Compliance" (unpublished Doctoral dissertation, University of Maine, 1970).

[30]Edward E. Jones, Kenneth J. Gergen, and Keith E. Davis, "Some Determinants of Reactions to Being Approved or Disapproved as a Person," Psychological Monographs: General and Applied, LXXVI, No. 2 (1962), pp. 1-16.

[31]Robert S. Feldman and Karl E. Scheibe, "Determinants of Dissent in a Psychological Experiment," Journal of Personality, XL (September, 1971), pp. 331-348.

[32]Philip W. Blumstein and Eugene A. Weinstein, "The Redress of Distributive Injustice," American Journal of Sociology, LXXIV (January, 1969), pp. 408-418.

them and tempered their demands with aggressive partners. In other words, high Machs "play the game" while low Machs apply justice norms. In conclusion, it appears that high Machs do behave differently than low Machs in situations involving elements of dissonance.

In a study of the relationship of Machiavellianism to decisions involving risks, Rim reported that high Machs tended to be influencers in the group discussion, leading to a shift of the whole group in the risky direction.[33] Further, high Machs tended to make higher risk decisions in their initial decisions than other subjects.

Gemmill and Heisler reported on research done concerning Machiavellianism in an industrial setting.[34] Contrary to their hypotheses, the results showed that high Machs felt a greater job strain, less job satisfaction, and no significant level of upward mobility.

Fontana conducted a study of Machiavellianism and manipulation among mental patients.[35] He found that Machiavellianism was consistently related to a "manipulator" reputation.

Braginsky's study of parent-child correlates of Machiavellianism produced evidence which showed an inverse relationship between the responses of children and their parents.[36] While this finding was contrary to expectations based on previous literature, she speculated that children of low Mach parents perceive the

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[33]Y. Rim, "Machiavellianism and Decisions Involving Risk," British Journal of Social and Clinical Psychology, V (1966), pp. 30-36.

[34]Gary R. Gemmill and W. J. Heisler, "Machiavellianism as a Factor in Managerial Job Strain, Job Satisfaction, and Upward Mobility," Academy of Management Journal, XV (March, 1972), pp. 51-62.

[35]Allan F. Fontana, "Machiavellianism and Manipulation in the Mental Patient Role," Journal of Personality, XXXIX (June, 1971), pp. 252-263.

[36]Dorothea D. Braginsky, "Parent-Child Correlates of Machiavellianism Manipulative Behavior," Psychological Reports, XXVII (December, 1970), pp. 927-932.

world through the eyes of "failures." In modern society, where manipulation is likely to be instrumental to personal achievement, these children learn from their parents' unsuccessful experiences.

Christie and Geis provide the most comprehensive review of the experimental research on Machiavellianism.[37] They summarized thirty-eight studies of Machiavellianism, involving fifty experimental conditions, and indicated that the primary difference between individuals who score higher and lower on the Mach Scale is the high scorers' greater emotional detachment. Furthermore, they concluded:

> High Machs manipulate more, win more, are persuaded less, persuade others more, and otherwise differ significantly from low Machs as predicted in situations in which subjects interact face to face with others, when the situation provides latitude for improvisation and the subject must initiate responses as he can or will, and in situations in which affective involvement with details irrelevant to winning distracts low Machs. . . . The weight of the experimental evidence indicates that high Machs are markedly less likely to become emotionally involved with other people, with sensitive issues, or with saving face in embarrassing situations. . . . High Machs initiate and control the social structure and mixed-Mach groups. They are preferred as partners, chosen and identified as leaders, judged as more persuasive, and appear to direct the tone and content of interaction--and usually also the outcome.[38]

In addition, Christie and Geis labeled the interpersonal stance of high Machs "the cool syndrome" and that of lows "the soft touch;" that is, high Machs are resistant to social influence, have an orientation to cognition, and initiate and control structure while low Machs are susceptible to social influence, have an orientation to persons, and accept and follow structure.

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[37]Christie and Geis, op. cit., pp. 285-314.

[38]Ibid., pp. 312-313.

In summary, the theory and empirical data cited in this review indicated that high Machs do, indeed, behave in significantly different ways than low Machs. This was particularly true in situations in which conditions of face-to-face interaction, latitude of improvisation, and irrelevant affect were present; that is, in open-ended situations where individuals had a range of choice in strategy and content. Thus, the concept of Machiavellianism appears to be a potentially important variable in studies of interpersonal relationships in organization.

Leadership

Conceptual Perspective

Leadership has been a topic of continuing interest among researchers in the field of administration. Attempts to define leadership have been almost as numerous as the writers and researchers involved. For example, definitions of leadership such as the following are typical:

> To lead is to engage in an act that initiates a structure-in-interaction as part of the process of solving a mutual problem.[39]
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> Leadership is power based predominantly on personal characteristics, usually normative in nature.[40]
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> The leader is the individual in the group given the task of directing and coordinating task-relevant group activities.[41]

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[39]John K. Hemphill, "Administration as Problem-solving," in Andrew W. Halpin (ed.), Administrative Theory in Education (New York: Macmillan Co., 1967), p. 98.

[40]Amitai Etzioni, A Comparative Analysis of Complex Organizations (New York: The Free Press, 1961), p. 116.

[41]Fred Fiedler, A Theory of Leadership Effectiveness (New York: McGraw-Hill Book Co., 1967), p. 8.

> Leadership in organization involves the exercise of authority and the making of decisions.[42]

In addition, there have been distinctions between elected leaders and appointed leaders, formal leaders and informal leaders, and leaders and headmen. Despite the phethora of definitions and differences in definitions, there are some basic threads of similarity and consistency running through the theoretical and research literature on leadership. For instance, analysis of leadership seems to imply that a leader will possess high influence potential, will use this influence to direct subordinates' behavior, and will direct subordinates' energies toward the accomplishment of the group or organizational task.

Furthermore, most conceptualizations of leadership are multidimensional; in fact, most seem to support at least two distinct dimensions of leadership. Although the labels that various theorists and researchers use are different, they tend to refer to similar aspects of leader behavior; for example, autocratic and democratic,[43] nomothetic and idiographic,[44] task leader and social leader,[45] instrumental and expressive,[46] system oriented and person oriented,[47] effectiveness and

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[42]Robert Dubin, Human Relations in Administration (Englewood Cliffs, N.J.: Prentice Hall, Inc., 1961), p. 348.

[43]Norman Maier and Allen Solem, "The Contribution of a Discussion Leader to the Quality of Group Thinking: The Effective Use of Minority Opinions," in Dorwin Cartwright and Alvin Zander (eds.), Group Dynamics (Evanston, Ill.: Row, Peterson, Inc., 1953), p. 549.

[44]Jacob W. Getzels and Egon G. Guba, "Social Behavior and the Administrative Process," School Review, LXV (Winter, 1957), pp. 423-441.

[45]Robert F. Bales, "In Conference," Harvard Business Review, XXXII (March-April, 1954), pp. 41-49.

[46]Amitai Etzioni, A Comparative Analysis of Complex Organizations (New York: The Free Press, 1961).

[47]Alan F. Brown, "Reactions to Leadership," Educational Administration Quarterly, III (Winter, 1967), p. 68.

efficiency,[48] goal achievement and group maintenance,[49] initiating structure and consideration.[50] All these pairs of labels refer to the two basic dimensions of leadership behavior that have been consistently identified in the theoretical and research literature on leadership. The first dimension deals with behavior which emphasizes the accomplishment of the task or purpose of the group, and the second tends to focus on behavior oriented toward close interpersonal relations and solidarity in the group and between the leader and followers. Bennis characterized the literature as follows:

> Organizational and group theories are . . . honeycombed with this duality. For Chester I. Barnard, satisfying the requirements of efficiency (personal relations) and effectiveness (productivity) is the prime task of the effective manager. . . . Argyris refers to the essential conflict between the restricted nature of formal organization and the "self-actualization" of the individual.[51]

The conceptual perspective employed in this study, one which is quite representative of these two broad areas of leader behavior, was Halpin's formulation of leader behavior in terms of initiating structure and consideration. Initiating structure refers:

> . . . to the leader's behavior in delineating the relationship between himself and members of the work group, and in endeavoring to establish well-defined patterns of organization, channels of communication, and methods of procedure.[52]

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[48]Chester Barnard, The Functions of the Executive (Cambridge, Mass.: Harvard University Press, 1938).

[49]Dorwin Cartwright and Alvin Zander, Group Dynamics (Evanston, Ill.: Row, Peterson, Inc., 1953).

[50]Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966).

[51]Warren G. Bennis, Changing Organizations (New York: McGraw-Hill, 1966), p. 65.

[52]Halpin, op. cit., p. 86.

Consideration refers:

> . . . to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and members of his staff.[53]

Further, Halpin speaks of the interactive nature of initiating structure and consideration with respect to goal achievement and group maintenance. He maintains that:

> . . . if a leader . . . is to be successful, he must contribute to both major group objectives of goal achievement and group maintenance. In Barnard's terms, he must facilitate cooperative group action that is both effective and efficient. According to the constructs that have been formulated, this means that the leader should be strong in Initiating Structure and should show high Consideration for the members of his work group.[54]

Empirical Findings

Early studies of leadership tended to concentrate on the traits of effective leaders. The main objective of these types of studies was to identify those characteristics which distinguished leaders from followers. However, Bird[55] and Stogdill[56] found that such an approach to the study of leadership often yielded contradictory results. Further, commenting on this problem, Blanchard and Hersey stated:

> Although early literature in educational administration and management seemed to

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[53] Ibid.

[54] Ibid., p. 87.

[55] Charles Bird, Social Psychology (New York: Appleton-Century, 1940), pp. 369-395.

[56] Ralph M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," Journal of Psychology, XXV (January, 1948), pp. 35-73.

> suggest a single ideal or normative style, the preponderance of evidence from recent empirical studies clearly indicates that there is no single all-purpose leadership style. Successful leaders are those who can adapt their leader behavior to meet the demands of their own unique environment.[57]

Current approaches to the study of leadership emphasize leader behavior and performance rather than traits. One of the most productive research efforts into leader behavior was the Ohio State University Leadership Studies. A major product of those studies, and probably the most widely employed measure of leader behavior of school administrators, was the Leader Behavior Description Questionnaire (LBDQ).

The Ohio State approach to the study of the leadership phenomenon is usually referred to as the "structural-functionalist" approach. The emphasis here is not on a cluster of traits with universal applicability but upon the general functional requirements of all organizations on which the leader's behavior may exert some effects.[58]

There are two major advantages to studying leadership through the analysis of the behavior of leaders by use of the LBDQ. First, the research deals directly with observable phenomenon, and one need not make a priori assumptions about the identity of whatever capacities undergird the phenomena. Second, the emphasis is on description rather than the more difficult task of evaluation of behavior against specified performance criteria.[59]

After extensive studies involving groups such as educational administrators and aircraft commanders,

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[57]Kenneth H. Blanchard and Paul Hersey, "A Leadership Theory for Educational Administrators," Education, XC (April-May, 1970), p. 303.

[58]Keith E. Tronc, "Leadership Perceptions of the Ambitious Educator," Journal of Educational Administration, VIII (October, 1970), pp. 145-168.

[59]Halpin, op. cit., p. 86.

Halpin developed five major conclusions to summarize the data gained from the LBDQ studies. Three of these conclusions are germane to this study:

(1) The evidence indicates that Initiating Structure and Consideration are fundamental dimensions of leader behavior, and that the Leader Behavior Description Questionnaire provides a practical and useful technique for measuring the behavior on these two dimensions.

(2) Changes in the attitudes of group members toward each other, and group characteristics such as harmony, intimacy, and procedural clarity, are significantly associated with the leadership style of the leader.

(3) Effective leader behavior is associated with high performance on both dimensions.[60]

Further evidence that effective leader behavior is associated with high performance on both consideration and initiating structure has been widely reported. In a laboratory experiment in Japan, Misumi and Shirakashi found that leaders who were both task-oriented and considerate in their behavior had the most productive groups.[61] Hemphill obtained the same results for the relation between the behavior of department chairmen in a college and faculty ratings of how well the department was administered.[62]

Patchen found that personal production norms (task motivation) of workers were highest when the leader

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[60] Ibid., pp. 97-98.

[61] Jyuji Misumi and S. Shirakashi, "An Experimental Study of the Effects of Supervisory Behavior on Productivity and Morale in a Hierarchical Organization," Human Relations, XIX (1966), pp. 297-307.

[62] John K. Hemphill, "Leader Behavior Associated with the Administrative Reputations of College Departments," in R. M. Stogdill and E. A. Coons (eds.), Leader Behavior: Its Description and Measurement (Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957).

encouraged proficiency as well as "going to bat" for them.[63] Additional support is gained from studies of Everson,[64] concerning school principals, and Halpin's study of aircraft commanders.[65]

In a study of principals' leadership styles and effectiveness as perceived by teachers, Utz reported a general, positive linear-relationship between such dimensions as consideration for teachers and production and teachers' rating of the principals' effectiveness.[66] He concluded that the results demonstrate the feasibility of utilizing leadership evaluation schemes incorporating "task" and "social emotional" dimensions in evaluating the performance of educational leaders.

In brief, it seems reasonable, therefore, to conclude that initiating structure and consideration as measured by the LBDQ provide a useful framework to use in the study of leader behavior of principals.

Authoritarianism

Blau and Scott define the authoritarian superior as one who has strong tendencies to supervise closely, to be strict rather than lenient, to have a formal

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[63]Martin Patchen, "Supervisory Methods and Group Performance Norms," Administrative Science Quarterly, VII (December, 1962), pp. 275-294.

[64]Warren L. Everson, "Leadership Behavior of High School Principals," National Association of Secondary School Principals Bulletin, XLIII (September, 1959), pp. 96-101.

[65]Andrew W. Halpin, "The Leader Behavior and Effectiveness of Aircraft Commanders," in R. M. Stogdill and A. E. Coons (eds.), Leader Behavior: Its Description and Measurement (Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957).

[66]Robert T. Utz, "Principal Leadership Styles and Effectiveness as Perceived by Teachers," Proceedings of the 56th Annual Meeting of the American Educational Research Association (April, 1972), pp. 1-6.

approach to subordinates, and to stick closely to rules and procedures.[67] As conceptualized in the present research, authoritarianism is concerned with this kind of authoritarian behavior in elementary school principals; authoritarianism does not refer to a personality type.

In general, studies conducted in organizational settings have indicated that authoritarian administrative or supervisory practices tend to lessen worker satisfaction and often hinder productivity. For example, Kahn and Katz found closeness of supervision was inversely related to both productivity and satisfaction.[68] Similar findings have been reported by Morse,[69] Day,[70] and Likert[71] in a variety of industrial organizations.

The results of studies in the school setting are also consistent with these findings. Haralick, in a study of teacher responses to administrative actions, found that when a principal was perceived as being autocratic, the teachers tended to develop cohesiveness with each other and little cohesiveness with the principal.[72] Hook also examined authoritarianism in an

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[67]Peter Blau and Richard Scott, Formal Organizations (San Francisco: Chandler Publishing Co., 1962), p. 148.

[68]Robert L. Kahn and Daniel Katz, "Leadership Practices in Relation to Productivity and Morale," in Dorwin Cartwright and Alvin Zander (eds.), Group Dynamics (New York: Row, Peterson, and Co., 1956), pp. 562-564.

[69]Nancy C. Morse, Satisfaction in a White Collar Job (Ann Arbor, Mich.: University of Michigan, 1953).

[70]Robert C. Day, "Some Effects of Combining Close, Punitive, and Supportive Styles of Supervision," Sociometry, XXXIV (December, 1971), pp. 303-327.

[71]Rensis Likert, New Patterns of Management (New York: McGraw-Hill Book Co., 1961).

[72]Joy G. Haralick, "Teacher Acceptance of Administrative Action," Journal of Experimental Education, XXXVII (Winter, 1968), pp. 39-47.

educational setting and suggested that authoritarianism blocks roads of inquiry, encourages conformity, and discourages a group's involvement in the decision-making process.[73]

Rees' study in secondary school setting revealed that authoritarian principals had significantly less loyal teachers than non-authoritarian principals.[74] Contrariwise, Blau and Scott studied service organizations and reported that supervisory authoritarianism was not negatively related to employee loyalty.[75] They suggested that, perhaps, employee reaction to authoritarianism might vary according to the nature of the work unit itself.

In summary, authoritarianism of superiors and resulting responses to such a leadership technique by subordinates appear to be a relevant element in the study of organizational behavior.

Emotional Detachment

Emotional detachment, as defined by Blau and Scott and used in the present research, refers to a superior's ability to remain calm and rarely, even in difficult situations, lose his temper.[76] Previously cited literature relating to leadership revealed that leaders who are perceived as being effective exhibit positive interpersonal relationships within the organization.

In their study of social welfare agencies, Blau and Scott found that calm and detached supervisors commanded greater loyalty from their subordinates.[77] Further, employees with calm supervisors tended to be

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[73]Sidney Hook, "The Danger of Authoritarian Attitudes in Teaching Today," School and Society, LXXIII (January, 1951), pp. 33-39.

[74]Richard T. Rees, "Hierarchical Relationships in Public Secondary Schools" (unpublished Doctoral dissertation, Rutgers University, The State University of New Jersey, 1971), p. 90.

[75]Blau and Scott, op. cit., p. 153.

[76]Ibid., p. 49.

[77]Ibid., pp. 154-155.

more productive in terms of visits to clients. Argyris also found that employees defined a good supervisor as one "who never becomes upset and yells at the employees."[78] Likewise, Gouldner, in his study of a gypsum plant, noted that a leader who did not maintain adequate social distance from his subordinates had difficulty in realizing effective supervisory practices.[79]

Hoy and Williams, in a study involving elementary schools, found that the more emotionally detached the principal was, the more loyal were his teachers.[80] In support of this data, Rees' study of secondary schools showed that principals with high emotional detachment had significantly more loyal teachers than principals with low emotional detachment.[81]

It would appear, therefore, that the ability of a superior to remain calm and detached, thus helping to retain his objectivity, seems to be a potentially important factor in a study of organizational behavior--one which has not been extensively explored.

Loyalty

The present research deals with the concept of loyalty as it relates both to an immediate superior and to the organization. Thus, loyalty has both a personal and an institutional dimension.

The organizational aspect of loyalty used in the research refers to teachers' loyalty to the school. In this context, loyalty is the degree of commitment and

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[78]Chris Argyris, "The Individual and Organization: An Empirical Test," Administrative Science Quarterly, IV (September, 1959), p. 164.

[79]Alvin Gouldner, Patterns of Industrial Bureaucracy (New York: The Free Press, 1954), pp. 45-56.

[80]Wayne K. Hoy and Leonard B. Williams, "Loyalty to Immediate Superior at Alternate Levels in Public Schools," Educational Administration Quarterly, VII (Spring, 1971), p. 8.

[81]Rees, op. cit., p. 89.

identification that teachers have with the particular school in which they are staff members.

It is, however, theoretically possible to be loyal to the school organization without having feelings of loyalty towards the principal. Thus, the personal aspect of loyalty used in the present research refers to the extent to which teachers are personally committed to the principal.

Stewart, discussing the dimensions of worker loyalty delineated them to include loyalty to the group, the profession, and superiors.[82] Straver's study of attitudes towards organizational loyalty revealed that the supervisor plays a most critical part in achieving employee loyalty.[83]

Hebert studied the factors affecting an individual's loyalty to an organization.[84] He grouped his independent variables into three categories: attitudinal, structural, and predispositional. Among the attitudinal variables related to loyalty, he found the satisfaction a member felt with his position in the organization to be of importance. Of the predispositional variables, he found that emotional level related highly to loyalty.

Blau and Scott were among the first researchers to introduce the concept of subordinate loyalty to an immediate superior as an integral aspect of organizational analysis.[85] They define subordinate loyalty as the liking of, acceptance of, respect for, and trust in the superior as expressed by subordinates.

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[82]Nathaniel Stewart, "A Realistic Look at Organizational Loyalty," The Management Review, L (January, 1961), pp. 22-24.

[83]Will E. Straver, "A Study of Attitudes Toward Organizational Loyalty" (unpublished Doctoral dissertation, The George Washington University, 1971).

[84]Forrest T. Hebert, "Factors Affecting Individual Loyalty to an Organization: The Legislative Organization" (unpublished Doctoral dissertation, The University of Iowa, 1971).

[85]Blau and Scott, op. cit., p. 144.

Murray and Corenblum enlarged upon what they referred to as the affect-oriented conceptualization of Blau and Scott.[86] They identified two additional dimensions of subordinate loyalty. The "cognitive" dimension referred to the unquestioned faith and trust which the subordinate had in the superior and the "behavioral" dimension which indicated a subordinate's willingness to remain with or follow his superior.

In a study of subordinate loyalty in elementary schools, Hoy and Williams revealed that the more emotionally detached the principal, the more loyal were his teachers.[87] However, no significant relationship was found between the hierarchical independence of principals and teacher loyalty to the principal.

Rees and Hoy, studying hierarchical relationships in secondary schools, reported several findings related to teacher loyalty.[88] They discovered that relationship-oriented principals did not have more loyal teachers than task-oriented principals. They also found that principals with high emotional detachment had significantly more loyal teachers than principals with low emotional detachment. In addition, it was reported that, with hierarchically independent principals, those with a non-authoritarian approach had significantly more loyal teachers than those with an authoritarian approach.

In brief, the literature seems to indicate that the concepts of subordinate loyalty to immediate superior and loyalty to the organization are important aspects of organizational life.

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[86]V. V. Murray and Allan F. Corenblum, "Loyalty to Immediate Superior at Alternate Hierarchical Levels in a Bureaucracy," American Journal of Sociology, LXII (July, 1966), p. 70.

[87]Hoy and Williams, op. cit., p. 8.

[88]Richard T. Rees and Wayne K. Hoy, "The Principal and Teacher Loyalty," Research Bulletin, New Jersey School Development Council, Rutgers Graduate School of Education, XVI, No. 1 (Fall, 1971), pp. 4-8.

Organizational Climate: Open to Closed

Schools differ markedly in their "feel," tone, or atmosphere. The traditional way to analyze and measure this "feel" is in terms of morale or esprit. However, more comprehensive ways to conceive of the atmosphere or climate of a school have been developed. Halpin and Croft have conceptualized and mapped the domain of the organizational climate of schools.[89] In a pioneering study of the climate of seventy-one elementary schools, they developed the Organizational Climate Description Questionnaire (OCDQ) which maps eight major dimensions of teacher-teacher and teacher-principal relations. From profiles of these school-climate dimensions, Halpin and Croft were able through factor-analytic techniques to identify contrasting prototypic profiles, which they arranged along a continuum defined at one end by an open climate and, at the other, by a closed climate.

The open climate is depicted by a situation in which the members enjoy extremely high morale. Teachers work well together without bickering and griping. It is an energetic, lively organization which is moving toward its goals while, simultaneously, providing satisfaction for the group members' social needs. Leadership acts emerge from both the group and the leader. Group members do not over-emphasize either task achievement or social needs satisfaction, but in both instances satisfaction seems to be obtained easily and almost effortlessly. The basic characteristic of the open climate is the "authenticity" of the behavior that occurs among all the group members.

The closed climate is characterized by a high degree of apathy among all organizational members. The principal is ineffective in directing and controlling the activities in the teachers; and he is not inclined to look out for their personal welfare. The school seems stagnant; morale is low because satisfaction is obtained from neither task achievement nor fulfillment of social needs. The main characteristic of the closed climate is the "inauthenticity" of the behavior of all organizational members.

Since the development of the OCDQ, there has been a plethora of climate studies. After an extensive

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[89]Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), pp. 131-249.

review of the research on the organizational climate of schools, Brown and House concluded that:

> There can be little doubt that climate . . . is now established as a relevant condition in the study of organizations. Probably a significant proportion of the variance in studies of organizational dynamics could be accounted for with climate scores.[90]

The following review of empirical work focuses primarily on more recent studies of organizational climate and characteristics of principals. Plaxton reported correspondence between principal personality and the OCDQ sub-scales that describe the principal.[91] Anderson found a correspondence between principal personality and the overall openness or closedness of school climate; open climate schools tended to have confident, self-secure, resourceful, and sociable principals while the closed climate schools tended to be evasive, submissive, conventional, and frustration prone.[92]

In a study of the leadership orientation of secondary school principals and organizational climates of their schools, Hall concluded that the organizational climate of a school was significantly related to the leadership orientation of the school principal.[93] Brickner's analysis of leader behavior and organizational climate in public schools demonstrated that leadership

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[90]Alan F. Brown and John H. House, "The Organizational Component in Education," Review of Educational Research, XXXVII (October, 1967), p. 401.

[91]Robert Plaxton, "Principal Personality and School Organizational Climate," CSA Bulletin, IV (July, 1965), pp. 21-35.

[92]Donald P. Anderson, Organizational Climate of Elementary Schools (Minneapolis, Minn.: Educational Research and Development Council of the Twin Cities Metropolitan Area, Inc., 1964).

[93]James P. Hall, "Explorations Among Perceptions of the Leadership Orientations of Secondary School Principals and the Organizational Climates of Schools They Administer" (unpublished Doctoral dissertation, University of Houston, 1970).

behavior, as measured by the LBDQ, was significantly related to organizational climate, as mapped by the OCLQ.[94]

Casey studied selected leadership factors in relation to organizational climate in schools and found that the perception of teachers of the principal's total effectiveness was related to the more open climates.[95] Research by French showed that openness of a school's organizational climate was significantly related to the principal's emphasis on human skills.[96]

McTaggert's study of job satisfaction and organizational climate in schools showed a significantly strong relationship between perceived openness and teachers' job satisfaction.[97] Nelson, in a study of reinforcing behavior by principals and organizational climate of schools, revealed that teachers tended to perceive a relatively open climate when the principal was perceived by the teachers to reflect a high level of reinforcement behavior.[98]

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[94]Charles E. Brickner, "An Analysis of Organizational Climate and Leader Behavior in a North Dakota School System" (unpublished Doctoral dissertation, The University of North Dakota, 1971).

[95]James L. Casey, "A Study of Relationships Between Organizational Climate and Selected Leadership Factors in Administration" (unpublished Doctoral dissertation, Oklahoma State University, 1971).

[96]Denny G. French, "The Relationships Between Teachers' and Principals' Perceptions of Organizational Climate in Elementary Schools and Principals' Perceptions of Administrative Skills" (unpublished Doctoral dissertation, 1971).

[97]Donald S. McTaggert, "Job Satisfaction and Organizational Openness as Perceived by Elementary Teachers in a Florida School System" (unpublished Doctoral dissertation, University of Miami, 1971).

[98]Robert H. Nelson, "Relationship Between Teacher Perception of Reinforcing Behavior of the Principal and Organizational Climate of Elementary Schools" (unpublished Doctoral dissertation, Purdue University, 1971).

Halpin's study of elementary schools showed that the profile for the open climate scores high on the subtests of Esprit and Thrust and low on Disengagement.[99] These scores provide a good index for positioning a given school climate along the open-closed continuum.

The theory and empirical data cited in this review provide significant evidence of the usefulness of the OCDQ to measure the organizational climate of schools along an open-closed dimension. The research results further showed a consistent pattern of relationships between the climate of schools and the personality characteristics of principals.

Rationale and Hypotheses

It seems appropriate to begin the rationale for the hypotheses with a brief recapitualization of the Machiavellian literature. The research evidence to date strongly supports the conclusion that individuals who score higher and lower on the Mach Scales behave differently. High Machs manipulate more than low Machs and are more successful in their manipulations; they win more, are persuaded less, and persuade others more than low Machs. The weight of the research evidence also indicates that high Machs are markedly less likely to become personally or emotionally involved with other people in dealing with sensitive issues or in difficult situations; that is, interpersonal involvements tend not to sidetrack high Machs from the task at hand. They tend to focus on explicit, cognitive definitions of the situation and strategies for succeeding. They also initiate and control the social structure in small face-to-face groups. Furthermore, high Machs are more often preferred as partners, chosen as leaders, judged as more pervasive, and seem to direct and control the tone, substance, and, usually, the outcome of interaction. However, they do not appear to be more hostile, vicious, or vindictive when compared to low Machs.[100]

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[99] Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), pp. 189-190.

[100] This characterization is essentially the same as that reached by Christie and Geis in their overview of the experimental literature. See Christie and Geis, op. cit.

This positive picture of high Machs needs to be tempered somewhat though. There are situations in which high and low Machs do not behave differently; that is, the situation apparently acts as a constraining or facilitating factor when the Machiavellian engages in behavior. Based on the experimental research, Christie and Geis identify three situational characteristics which they believe are particularly relevant in this regard.[101] They include:

1. face-to-face interaction

2. latitude for improvisation

3. arousing irrelevant affect

In those situations in which these conditions are operative, high Machs seem particularly effective. They function at their best in situations where they have an opportunity to observe and communicate with the people with whom they are interacting, in situations where the structure of the social interaction is open ended, and in situations where it is relatively easy to become emotionally and personally involved.

Another fact should be underscored concerning the overwhelming number of Mach studies reviewed in this report. They were experimental studies performed in the laboratory, not field studies in the real world. Nonetheless, the picture of the high Mach which emerges is fascinating. Do high Machs perform similarly in the outside world or more specifically in the arena of school administration?

It seems reasonable to assume that the public school principal is involved in a situation characterized by structural looseness;[102] that is, he can avail himself of the opportunity to observe, communicate, and interact directly with his professional staff. Furthermore, as

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[101] Christie and Geis, op. cit., pp. 285-294.

[102] This was also the conclusion reached by Bidwell after a comprehensive review of the organizational literature and research on the school. See Charles Bidwell, "The School as a Formal Organization," in James G. March (ed.), Handbook of Organizations (Chicago: Rand McNally and Co., 1965), p. 976.

the "educational leader" of the school, there appears to be ample opportunity for innovative behavior and improvisation on his part. Finally, in the school milieu the principal interacts with teachers, parents, and students; a context which appears to provide a highly affective, complex situation. These are the conditions that in the laboratory provide a relative advantage for high Machs. If these conditions apply to the school principalship and if they operate similarly in the outside world, principals who are higher Machs should behave differently from those who are lower Machs.

Halpin has indicated that the major dimensions of leadership behavior are initiating structure and consideration.[103] Furthermore, effective leader behavior tends to be associated with high performance on both dimensions.[104] The personal characteristics of high and low Machs should provide a clue to predicting their leadership behavior in the school context. High Machs tend to focus on explicit, cognitive definitions of the situation and strategies for succeeding. Additionally, they are quite skillful in initiating and controlling the social structure in small groups; that is, they tend to direct and control the tone, substance, and usually the outcome of the interaction. Low Machs, on the other hand, are more interested in people and accept and follow structure; in fact, they tend to get "caught up" with personal and emotional involvement in interactions with others. Therefore, the following hypothesis was proposed:

H_1 The greater the Machiavellian orientation of a school principal, the greater the teachers' perception of his initiating structure.

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[103] Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), pp. 97-98.

[104] Ibid., pp. 93-98. See also John K. Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," The Journal of Educational Psychology, XLVI (November, 1955), pp. 385-401; and Andrew W. Halpin, Leader Behavior of School Superintendents (Chicago: Midwest Administration Center, University of Chicago, 1959).

The prediction with respect to considerate leader behavior seems not so clear cut. Low Machs are characterized by susceptibility to social influence and a propensity to become very personally involved with people. In brief, they are people-oriented; hence, one might expect low Machs to exhibit highly considerate leader behavior. However, although high Machs tend to be oriented toward cognitions and the task, they also appear quite sensitive to "reading the situation" and developing strategies for "winning" and succeeding. Given the fact that administrative effectiveness tends to be associated with both high consideration and high initiating structure, it would not be inconsistent for high Machs to be also high in consideration, and, indeed, the research to date does indicate that they are not more hostile, vicious or vindictive when compared to low Machs. In brief, it seems reasonable to suggest that both high and low Machs may be perceived as exhibiting consideration in leadership behavior, albeit for quite different reasons; therefore, the following hypothesis was adduced:

H_2 There will be no significant relationship between the Machiavellian orientation of the school principal and teachers' perception of his consideration.

However, given the high Machs task-oriented stance, sensitivity to the situation, and ability to win more, persuade more, and manipulate more successfully than low Machs, it seemed reasonable to predict:

H_3 The greater the Machiavellian orientation of a school principal, the higher the effectiveness rating from his teachers.

Although the weight of the evidence indicates little, if any, relationship between the Machiavellian personality and the Authoritarian personality,[105] there is no such evidence in terms of the relationship between the Machiavellian personality and authoritarian administrative

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[105]In nine samples between 1955 and 1956, there was no significant correlation between the F and Mach scales; however, in 1964 in a sample of college students a small but significant correlation ($r = -.2$) between the F-scale and Mach IV scale was found.

behavior. The research does indicate, though, that high Machs are task-oriented; however, task-oriented behavior is not necessarily authoritarian behavior.[106] Furthermore, there is evidence that authoritarian principal behavior in the school setting is an unsuccessful leader behavior strategy.[107] Given the sensitivity of high Machs to reading the situation and developing strategies to succeed, it seems likely that they will try to avoid blatant authoritarian behavior, attempting to be task-oriented in a non-authoritarian, considerate way. Low Machs, of course, also seem likely to eschew an authoritarian approach and focus on a considerate, people-oriented approach; therefore, it was hypothesized:

> H_4 There will be no significant relationship between the Machiavellian orientation of the school principal and teachers' perception of authoritarian leader behavior.

The concept of emotional detachment developed and used in this study is derived directly from the work of Blau and Scott.[108] Emotional detachment refers to the administrator's ability to remain calm and not lose his temper in difficult situations. To be sure this is a somewhat narrow conception of the concept, but, nonetheless, one which seems important in the study of superior-subordinate relationships. Based on the results of thirty-eight experimental studies on Machiavellianism, Christie and Geis concluded, "The primary difference between individuals who score higher and lower on the Mach scales is the high scorers' greater emotional

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[106]For an example see Vincent McNamara and Frederick Enns, "Directive Leadership and Staff Acceptance of the Principal," Canadian Administrator, VI (November, 1966), pp. 1-4.

[107]For example, see Richard Rees and Wayne K. Hoy, loc. cit. and Wayne K. Hoy and Richard Rees, "Subordinate Loyalty to Immediate Superior: A Neglected Concept in the Study of Educational Administration," Sociology of Education (in press).

[108]Blau and Scott, op. cit., p. 149.

detachment."[109] While emotional detachment in the latter case refers to a more general detachment in terms of affective involvement, it seemed logical to predict the following:

H_5 The greater the Machiavellian orientation of a principal, the greater the teachers' perception of his emotional detachment.

Loyalty to one's immediate superior appears to be a significant concept in teacher-principal relationships in elementary and secondary schools. In a study of elementary schools, Hoy and Williams concluded that teacher loyalty to the principal may be a necessary condition for effective principal leadership.[110] Furthermore, the results of a study of secondary schools by Hoy and Rees led to the conclusion that the degree of teacher loyalty to the principal provided one index of the principal's success in schools.[111] In both of these studies emotional detachment was significantly related to teacher loyalty: principals with high emotional detachment had significantly more loyal teachers than principals with low emotional detachment. Given the apparent significance of teacher loyalty to the principal and the high Machs propensity for success and emotional detachment, the following hypothesis is proposed:

H_6 The greater the Machiavellian orientation of the principal, the more loyalty he will command from teachers.

The open organizational climate has been described as a dynamic, lively organization which is moving toward its goals while simultaneously providing satisfaction for the individuals' social needs. Leadership acts emerge easily and appropriately as they are necessary. Teachers are neither preoccupied exclusively with task-achievement nor social-needs satisfaction; in fact, satisfaction derives from both task accomplishment and pleasant interpersonal relationships. To the contrary, the closed organizational climate is marked by ineffectiveness. Although some attempts are being made to move

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[109] Christie and Geis, op. cit., p. 311.

[110] Hoy and Williams, op. cit., p. 10.

[111] Hoy and Rees, op. cit.

the organization, they are not taken seriously by the teachers; these attempts are met with apathy.[112]

In brief, the open climate is marked by a feeling of both task accomplishment and pleasant interpersonal relationships which lead to a feeling of openness and authenticity in interactions. Although low Mach principals might be successful in generating good interpersonal relationships, it seems questionable as to the extent which they will provide task-oriented leadership. High Machs, on the other hand, are politic. In addition to their task-oriented nature, they are successful politicians (at least in the laboratory); they "tell-em what they wanna hear." Further, high Machs do not appear to be obviously manipulating; in fact, they usually get others to help in such a way that, in the process, they are thanked for the opportunity.[113] Consequently, the following hypothesis is proposed:

H_7 The greater the Machiavellian orientation of the principal, the more open the teachers will perceive the organizational climate of the school.

In addition to these seven hypotheses, several other questions guided the empirical phase of the investigation.

Q_1 What is the relationship between the Machiavellian orientation of the principal and teachers' loyalty to the school?

Q_2 What is the relationship between the Machiavellian orientation of the principal and his administrative experience?

Q_3 Is there a significant difference between the Machiavellian orientation of elementary and secondary principals?

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[112]Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), pp. 189-190.

[113]Christie and Geis, op. cit., pp. 190-209, pp. 303-309.

CHAPTER III

METHODOLOGY

In order to test the hypotheses and to explore the research questions posed in this study, data were collected from faculty members and principals in forty elementary and forty secondary schools in New Jersey. The sample, the operational measures, and the procedures for the collection and analysis of data are described in this chapter.

The Sample

Principals

The sample consisted of eighty public school principals from the state of New Jersey. Forty were elementary school principals and forty were secondary school principals. Nearly all were men; only two principals were women. All principals had been employed in the present district at least one year prior to the study; that is, all principals were in at least their second year in that particular school.

Initially, a list of 150 elementary and 150 secondary principals was drawn randomly from a list of all elementary and secondary principals, respectively, in New Jersey.[1] Subsequently, it was decided to use schools which were in reasonably close traveling distance (less than fifty miles) from Rutgers University. In addition, an attempt was also made to secure a sample of principals across a wide range of Machiavellian orientation scores.

Technically, the sample of eighty principals was somewhat fortuitous rather than completely planned. Participation in the research imposed a minimum of three conditions: (a) the principal's personal willingness to serve as a subject, (b) a schedule of faculty

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[1] We used the randomly selected schools to check the range of scores on our Machiavellian measure. For elementary principals the range was 80 to 116 with a $\bar{X}$ = 97.27; for secondary principals the range was 80 to 118 with $\bar{X}$ = 97.48.

activities which made it possible to ask a group of teachers to meet either after or before school hours to respond to a questionnaire, and (c) the consent of the principal, faculty, and often the superintendent to collect data from the professional staff. Nevertheless, the schools sampled were not atypical of elementary and secondary schools in New Jersey; they varied in terms of size and socio-economic level of the community, and they included schools in urban, suburban, and rural areas (the demographic characteristics of the schools are found in Appendix A). All eighty principals who consented to the study in their schools returned usable measures of their Machiavellian orientation.[2]

Faculty

In order to test the hypotheses of the study, it was also necessary to collect data from the faculty in each school. Two different strategies were used to collect the data from the elementary and secondary school faculties. In the elementary schools, data were collected from virtually all the teachers in each school. In the secondary schools, however, a random sample of teachers from each school was drawn. It was decided that a minimum of ten per cent of the staff (but at least eight respondents per school), randomly selected from each school, would be asked to participate in the study and that only schools with a 100 per cent return would be included in the analysis.[3] Since previous research had indicated that average scores computed on the basis of five to seven descriptions yielded stable scores that could be used as indices of leader behavior, a minimum of eight respondents per school seemed a reasonable sample for each school.[4]

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[2]Actually eighty-eight principals agreed to participate, but incomplete responses from their faculties precluded the use of the data in the analysis of eight schools.

[3]Data were collected in forty-eight schools, but complete returns were only obtained in forty schools.

[4]Andrew W. Halpin, Leader Behavior of School Superintendents (Chicago: Midwest Administration Center, University of Chicago, 1959), p. 28.

Research Instruments

The Machiavellianism Scale (Mach V)

The operational measure for Machiavellianism was the Mach V Scale devised by Christie. The Scale is a twenty-item, forced-choice questionnaire. Four earlier versions of the Mach Scale were Likert-type scales; however, the forced-choice format was used in the last version to minimize the effects of such possible extraneous variables as response set and social desirability. Respondents are forced to choose, from a set of three responses for each item, the statement closest to his own feelings, omitting the third. The directions call for the respondent to place a "+" in front of the item they agree with most and a "-" in front of the item they disagree with most for each set of items. Examples of items include:

1. ___A. Barnum was probably right when he said that there's at least one sucker born every minute.
   ___B. Life is pretty dull unless one deliberately stirs up some excitement.
   ___C. Most people would be better off it they control their emotions.

2. ___A. It is a good policy to act as if you are doing the things you do because you have no other choice.
   ___B. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.
   ___C. Even the most hardened and vicious criminal has a spark of decency somewhere within him.[5]

The instrument has a theoretical scoring range of 40 to 160; the higher the score, the more Machiavellian the orientation of the subject.

Reliability of the Mach V for most samples is in the .60's.[6] Although the .60's are not overly impressive

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[5]A complete copy of the instrument, Mach V Scale, is found in Richard Christie and Florence Geis, Studies in Machiavellianism (New York: Academic Press, 1970), pp. 22-25.

[6]Ibid., p. 27.

in terms of internal consistency, there is an abundance of experimental data which indicate that the scale does make meaningful discriminations among individuals' behavior.[7] Further, a large number of studies have supported the construct validity of the scale.[8]

Leader Behavior Descriptive Questionnaire (LBDQ)

The Leader Behavior Descriptive Questionnaire (LBDQ) is composed of thirty short, descriptive statements of the way in which leaders behave. The instrument was developed at Ohio State University and has undergone several revisions (See Appendix B). The form used in this study measures two fundamental dimensions of leader behavior, initiating structure and consideration, identified through factor analysis by Halpin.[9] Each dimension consists of fifteen Likert-type items. Responses are made on a five-point scale and are scored from four (always behaves according to the description) to zero (never behaves according to the description); the higher the score on each dimension, the higher the consideration and initiating structure scores. In reference to the study, LBDQ scores were obtained from the teacher respondents, and mean LBDQ scores were computed for the principal in each school.

Reliability of the LBDQ, using the Spearman-Brown formula, has been consistently high in Halpin's studies yielding split-halves of .82 and .86 on Initiating Structure and .92 and .93 on Consideration.[10] In addition, Halpin[11] has shown the LBDQ to have concurrent

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[7] Ibid., pp. 290-293.

[8] Ibid.

[9] Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Co., 1966), p. 88.

[10] Ibid.; See also Halpin, Leader Behavior of School Superintendents, op. cit., p. 9.

[11] Andrew W. Halpin, "The Leadership Behavior and Effectiveness of Aircraft Commanders," in Ralph Stogdill and Alvin Coons (eds.), Leader Behavior: Its Descriptions and Measurement (Columbus, Ohio: Ohio State University, Bureau of Business Research, 1957).

criterion validity, and in a more recent validity study conducted under well-controlled laboratory conditions, Stogdill[12] has also supported the validity of the LBDQ subtests.

Authoritarianism

To measure the level of authoritarian behavior of principals as perceived by teachers, seven Likert-type items were included in the questionnaire. These items were adapted from Blau and Scott's[13] measure of authoritarian supervision in their study of a social welfare agency and had been used by Rees and Hoy[14] in the study of leadership styles of secondary principals. Rees and Hoy reported an alpha coefficient of .70 as a measure of internal consistency. In addition, the empirical findings of both Blau and Scott and Rees and Hoy provided some support for the construct validity of the measure. However, since a check of the internal consistency of the measure for the present sample yielded an alpha less than .6 for the elementary principals, the scale was modified. Two items were deleted and three items were added as a result of a cluster analysis of questionnaire items. The revised eight-item measure had an alpha coefficient of .71 for the elementary principals and .76 for the secondary principals. The items added included the following: "He rules with an iron hand;" "He refused to explain his actions;" and "He speaks in a manner not to be questioned." The item scores were summed; the higher the score, the greater the authoritarianism of the principal as perceived by his teachers. The complete and revised measure of authoritarianism is found in Appendix B.

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[12]Ralph M. Stogdill, "Validity of Leader Behavior Descriptions," Personnel Psychology, XXII (Summer, 1969), p. 157.

[13]Peter M. Blau and Richard Scott, Formal Organizations (San Francisco: Chandler Publishing Co., 1962), p. 149.

[14]Richard T. Rees and Wayne K. Hoy, "The Principal and Teacher Loyalty," Research Bulletin, New Jersey School Development Council, Rutgers Graduate School of Education, XVI (Fall, 1971), pp. 4-8.

Emotional Detachment

Emotional detachment was defined as a superior's ability to remain calm in response to difficult and trying situations. In the present study, an index of the principal's emotional detachment was obtained from teachers' responses to a single, Likert-type item, as used by Blau and Scott in their study of social welfare agencies (See Appendix B).[15] The item was scored from zero to four, ranging from "When things don't go smoothly he always loses his temper or gets excited," to "When things don't go smoothly, he never loses his temper or gets excited." Teacher responses were computed, and a school mean score for emotional detachment was obtained. The higher the score, the more emotional detachment a principal was perceived to exhibit.

Organizational Climate Descriptive Questionnaire (OCDQ): Openness Index

In a significant and major research effort, Halpin and Croft attempted to map the domain of organizational climate; that is, to identify and describe its dimensions and to measure them in a dependable way.[16] The result of their work was the development of the OCDQ, a descriptive instrument composed of sixty-four, Likert-type items which are divided into eight subtests: Disengagement, Hindrance, Esprit, Intimacy, Aloofness, Production Emphasis, Thrust, and Consideration. Factor analysis of the profiles of schools along these eight dimensions led to the identification of an "openness" factor. The openness factor is best measured by the scores high on the subtests of Esprit and Thrust and low on Disengagement. Accordingly, an index of the openness of the school climate can be computed as follows:

Openness Index = Esprit Score + Thrust Score - Disengagement Score

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[15] Blau and Scott, loc. cit.

[16] Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (Washington, D.C.: U.S. Office of Education, No. SAE 543-8639, Final Report, 1962).

Halpin and Croft define the three subtests under consideration as follows:[17]

1. Esprit refers to "morale." The teachers feel that their social needs are being satisfied and that they are, at the same time, enjoying a sense of accomplishment.

2. Thrust refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." "Thrust" behavior is marked not by close supervision but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkly task-oriented, is, nonetheless, viewed favorably by the teachers.

3. Disengagement refers to the teachers' tendencies to be "not with it." This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of anomie as first described by Durkheim. In short, this subtest focuses upon the teachers' behavior in a task-oriented situation.

Split-half coefficients of reliability, corrected by the Spearman-Brown formula, for the three measures were .75, .84 and .73 respectively. The validity of the OCDQ subtests has been supported in numerous studies. Perhaps, the most comprehensive of the validity studies was completed by Andrews; he concluded:

> . . . that the subtests of the Organizational Climate Description Questionnaire provide reasonably valid measures of important aspects of the school principal's leadership,

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[17] Ibid., pp. 29-32.

in the perspective of interaction with his staff.[18]

The usefulness of the openness score as an index of the openness (or closedness) of the organizational climate of a school has been demonstrated in several studies.[19] In addition, Hoy has supported the validity of using the openness index as a measure, particularly for larger secondary schools.[20] The higher the score on the index, the more open staff members perceive the climate of the school; that is, the more they describe the school as an energetic, lively organization which is moving towards its goals but which is also providing satisfaction for the individuals' social needs.

Loyalty to the Principal

A measure of loyalty to immediate superior was based on the responses to eight Likert-type statements originally adapted by Hoy and Williams[21] from a scale

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[18]John H. M. Andrews, "School Organizational Climate: Some Validity Studies," Canadian Education and Research Digest, V (December, 1965), p. 333. See also Robert J. Brown, Organizational Climate of Elementary Schools, Research Monograph No. 2 (Minneapolis: Educational Research and Development Council of Twin Cities, 1965).

[19]James Bruce Appleberry and Wayne K. Hoy, "The Pupil Control Ideology of Professional Personnel in 'Open' and 'Closed' Elementary Schools," Educational Administration Quarterly, V (Fall, 1969), pp. 74-85; and A. Ray Helsel, Herbert A. Aurbach, and Donald J. Willower, "Teachers' Perceptions of Organizational Climate and Expectations of Successful Change," The Journal of Experimental Education, XXXVIII (Winter, 1969), pp. 39-44.

[20]Wayne K. Hoy, "Some Further Notes on the OCDQ," Journal of Educational Administration, X (May, 1972), pp. 46-51.

[21]Wayne K. Hoy and Leonard B. Williams, "Loyalty to Immediate Superior at Alternate Levels in Public Schools," Educational Administration Quarterly, VII (Spring, 1971), pp. 1-11.

developed by Murray and Corenblum[22] to measure loyalty to one's immediate superior in a bureaucracy (See Appendix B). The eight items combine affective, cognitive, and behavioral aspects of loyalty to the principal in the one eight-item scale. The item scores were summed, and a mean loyalty to the principal score was calculated for each school; the higher the score, the more loyalty commanded by the principal. Reliability of the scale has been consistently high with alphas in the .90 range.[23]

Loyalty to the School

A single item was utilized to determine the loyalty of the teachers to the school. Teachers were asked to respond to the question, "How much loyalty do you feel toward your school?" Responses were made on a five point scale, scored from one (almost none at all) to five (a very great deal). A score was obtained from every respondent, and a mean score was calculated for each school.

Principal Effectiveness

A single item was used to determine the teachers' perception of the effectiveness of the school principal. Teachers were asked to respond to the statement, "My principal provides effective leadership." Responses were made on a five-statement scale scored from five (almost always) to one (almost never). The higher the score, the more effective the principal was perceived by his staff. Scores were obtained from all teacher participants, and a mean score was calculated for each school.

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[22]V. V. Murray and Allan Corenblum, "Loyalty to Immediate Superior at Alternate Hierarchical Levels in a Bureaucracy," The American Journal of Sociology, LXII (July, 1966), pp. 77-85.

[23]Hoy and Williams, op. cit.; and Frederick Aho, "Patterns of Succession of High School Principals" (unpublished Doctoral dissertation, Rutgers University, 1972).

Data Collection

Principal Data

The Mach V Scale was mailed to 300 principals along with a cover letter explaining that the researchers were conducting a survey of social attitudes. After several follow-up letters, seventy-eight per cent of the principals returned usable Mach V Scales.

Next, a sample of ninety-two principals (forty-six elementary and fifty-six secondary) was contacted by telephone and informed that a researcher would like to collect data from his staff to explore relationships between the principal's attitudes and behavior and the attitudes of the teachers. The principals were assured that the results would be strictly confidential and that no individual or school would be named in the report of the research. Eighty-six per cent of the principals contacted agreed to participate in the study (forty elementary and forty-eight secondary principals). Note should be made that often times it was necessary for the researcher to visit with the principal or send a sample of the questionnaire before final acceptance was obtained. All principals responded to a demographic questionnaire and a Mach V Scale if they had not already completed one.

Faculty Data

Previous experience led to the belief that collecting data from all the elementary staff in each school was not only possible but that it was probably as efficient as any sampling technique. Elementary schools in New Jersey are relatively small when compared to their secondary counterparts; hence, the logistics of collecting data from virtually all faculty members in each school at a faculty meeting seemed feasible. Therefore, for the elementary schools, the teacher instruments were compiled into a booklet consisting of eighty-two items and administered personally by the researcher at a faculty meeting. A general description of the research and a firm reassurance of anonymity were always given as part of the instructions. The entire questionnaire was usually completed in less than thirty minutes. In this fashion, data were collected from 893 teachers in forty elementary schools.

The procedures used to collect data from the secondary teachers were different. It was not possible to collect data from all secondary teachers in each school during faculty meetings; secondary principals "vetoed" the idea, although most were amenable to collecting data from a smaller sample of the faculty. Therefore, upon reporting to the school, the researcher requested an alphabetized list of the professional, full-time staff excluding administrators and medical personnel. Through the use of a table of random numbers, eight to fifteen teachers were chosen at random in each school (depending on school size). They were given the questionnaire booklet along with instructions as to its purpose and how it should be answered. Each staff member was urged to respond candidly, and it was made clear that the responses were confidential and anonymous. In addition, they were given a plain brown envelope with no identifying markings and instructed that upon completion of the questionnaire, they were to place the questionnaire in the envelope, seal it, and return it to a designated secretary. The researcher returned to each school a week later and picked up all the envelopes. In forty out of the forty-eight schools, responses were obtained from all subjects; 385 teachers responded to the questionnaires.

Treatment of Data

Scoring the Instruments

Responses to the questionnaires were codified and keypunched directly from the teachers' and principals' questionnaires onto IBM cards and then verified. Scoring of the various scales was accomplished by a series of scoring programs developed for the IBM 360-67 computer.[24] The scoring programs yielded individual and school scores for each scale. Personal demographic data were also collected from respondents and codified and scored in the same way.

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[24]Dr. Bernard Andrews and Mr. William Dolphin, both of Rutgers University, were instrumental in the development of the scoring programs.

Data Analysis

The principals' Mach scores and mean scores for consideration, initiating structure, authoritarianism, emotional detachment, openness of the climate, loyalty to the principal, loyalty to the institution, and effectiveness of the principal were analyzed. Pearson product-moment correlations were employed to test the major hypotheses of the study. Analysis of variance procedures were employed to investigate other relationships. Finally, multiple regression analysis was used to explore for possible variables moderating the relationship between Machiavellianism and aspects of leader behavior.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The Mach V Scale was administered to forty elementary and forty secondary school principals in New Jersey. Responses to a battery of instruments were also secured from teachers in the respective schools in an attempt to measure descriptions of the leader behavior of the principals as well as faculty reaction to the principals; 1,278 teachers responded to the research instruments.

The first section of this chapter contains a report of the results of the empirical tests of the basic hypotheses and questions which guided the study. A further analysis of the hypotheses and a search for potential moderating variables is then described, followed by an analysis of Machiavellianism and leader "effectiveness." The chapter is concluded with an analysis of relationships between Machiavellianism and selected demographic characteristics, with comparisons of these results with other published findings.

Testing the Hypotheses

Product-moment correlation coefficients were computed to test the major hypotheses of the study. The common practice of setting the probability of a Type I error at .05 was adopted in this study. One-tailed tests of significance were used to determine the level of significance of hypotheses for which a theoretical rationale was developed and the direction of the relationship predicted. In addition, correlational and analysis of variance techniques were used to explore several related research questions.

H_1 The greater the Machiavellian orientation of a school principal, the greater the teachers' perception of his initiating structure.

Computation of a coefficient of correlation between the principals' Machiavellian orientation scores and their mean initiating structure scores yielded an $r = -.20$ ($p > .05$) for all principals; therefore, the first hypothesis was rejected. Indeed there was a slight

tendency, contrary to the hypothesis, for Machiavellian orientation to be inversely related to initiating structure; that is, the greater the Machiavellian orientation of the principal, the less his behavior was described as high on initiating structure by his teachers.

H_2 There will be no significant relationship between the Machiavellian orientation of the school principal and his teachers' perception of his consideration.

The second hypothesis was confirmed. For the eighty principals in the sample, there was no significant relationship between Machiavellian orientation of the principal and consideration in behavior as perceived by teachers ($r = -.17$, $p > .05$).

H_3 The greater the Machiavellian orientation of a school principal, the higher his effectiveness rating from his teachers.

Contrary to the prediction, the effectiveness rating of a principal was not significantly related to his Machiavellian orientation ($r = -.15$, $p > .05$); hence, the hypothesis was rejected. In fact, once again, the relationship, although not strong, was in the direction opposite of the prediction. There was a slight tendency for Machiavellian orientation of the principal to be inversely related to effectiveness.

H_4 There will be no significant relationship between the Machiavellian orientation of the school principal and his teachers' perception of authoritarianism in his behavior.

The fourth hypothesis was confirmed. There was virtually no relationship ($r = -.06$, $p > .05$) between the Machiavellian orientation of the principal and authoritarianism in his leader behavior as perceived by his teachers.

H_5 The greater the Machiavellian orientation of a principal, the greater his teachers' perception of his emotional detachment.

H_6 The greater the Machiavellian orientation of a principal, the more loyalty he will command from teachers.

H_7 The greater the Machiavellian orientation of a principal, the more open the teachers will perceive the organizational climate of his school.

None of these last three hypotheses was confirmed. Machiavellian orientation of the principal was not related to the principal's emotional detachment ($r = .07$, $p > .05$), teacher loyalty to the principal ($r = -.06$, $p > .05$), or the openness of the school climate ($r = .01$, $p > .05$). In fact, the striking feature of these findings was that virtually no relationship existed between the Machiavellian orientation of the principal and the respective variables. All the correlation coefficients were near zero--an indication that the scores were randomly paired.

In addition to these seven hypotheses, several other questions guided the empirical phase of the investigation.

Q_1 What is the relationship between the Machiavellian orientation of the principal and his teachers' loyalty to the school?

There was virtually no relationship between teacher loyalty to the school and the principal's Machiavellian orientation ($r = -.09$, $p > .05$).

Q_2 What is the relationship between the Machiavellian orientation of the principal and his administrative experience?

Two correlation coefficients were computed to explore this question; however, neither the principal's administrative experience in a particular school nor total administrative experience was significantly related to his Machiavellian orientation ($r = .03$ and $r = .11$ respectively, $p > .05$).

Q_3 Is there a significant difference between the Machiavellian orientations of elementary and secondary principals?

In order to answer this question, the mean scores on Machiavellian orientation for elementary and secondary principals were computed and compared by analysis of variance. The mean Mach scores for the forty elementary principals ($\bar{X} = 98.05$) and the forty secondary principals

($\bar{X}$ = 98.75) were very similar. The F-ratio of .12 was not statistically significant (See Table 1). The results of the initial pilot study where 150 elementary and 150 secondary principals were randomly selected were the same; that is, no significant difference between the Mach scores of elementary and secondary principals.

TABLE 1

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM OF ELEMENTARY AND SECONDARY SCHOOLS

	Elementary Schools	Secondary Schools
Number	40	40
Mean	98.05	98.75
Standard Deviation	8.80	8.84

Source	df	SS	MS	F
Between Groups	1	9.80	9.80	.12 (ns)
Within Groups	78	6065.39	77.76	
Total	79	6075.19		

The surprising thing about the findings was the lack of relationship between Machiavellian orientation and any of the dependent variables. None of the variables was significantly related to Machiavellian orientation. In testing the hypotheses, elementary and secondary principals were combined. It was assumed that the school principalship, in general, provided a context in which high Machs would be able to "operate" effectively. Furthermore, there was no significant difference

between the Mach scores of elementary and secondary principals; they were virtually the same.

However, in order to control for school level, the hypotheses were also tested separately for elementary principals and for secondary principals. One might argue that the institutional contexts of the two kinds of schools were quite different and this might influence the relationships. In the present sample, the elementary schools had an average of twenty-one teachers and the secondary schools had an average of eighty-five teachers. In addition, the secondary schools were more complex. The secondary principal had to deal with young adults, not children, and he was responsible for the supervision of a multi-level organization with teachers assigned to various departments under their own department heads. Elementary schools were generally not departmentalized.

The results of the separate tests of the hypotheses for elementary and secondary teachers alter the picture very little. In general, there was no relationship between the Machiavellian orientation of the principal and either his leadership style as perceived by teachers or teachers' reaction to his leadership. There was one exception. For secondary principals, the greater the degree of Machiavellian orientation of principals, the less teachers described the principal as considerate in his leader behavior ($r = -.36$, $p < .05$). Although the relationship was not predicted, it was a moderate and significant one. The results of the tests of the relationships between Machiavellian orientation and the major variables for elementary principals, for secondary principals, and for principals combined are summarized in Table 2.

Perhaps, one reason for the lack of consistent relationships in the present findings was the assumption of linearity which was made. There is some reason to believe that the relationships between Machiavellian orientation and patterns of behavior may be curvilinear for administrators. In fact, Christie and Geis suggest that both extremely high Machs and extremely low Machs might make ineffective administrators.

> . . . anyone extremely low on Mach would make a poor administrator. He would be too likely to become affectively involved. . . . The problem with extremely high-Mach administrators is that their cool cognitive analysis of the needs of the organization coupled with a

TABLE 2

CORRELATION COEFFICIENTS BETWEEN MACHIAVELLIAN ORIENTATION AND MAJOR VARIABLES

Variable	All Principals (n=80)	Elementary Principals (n=40)	Secondary Principals (n=40)
Initiating Structure	-.20	-.24	-.15
Consideration	-.17	.04	-.36*
Effectiveness	-.15	-.01	-.26
Authoritarianism	-.06	-.13	.02
Emotional Detachment	.07	.02	.14
Principal Loyalty	-.06	.02	-.10
Openness	.01	.06	.01
School Loyalty	-.09	.07	-.20

*$p < .05$

> disregard for the individual needs of those within it could quite easily lead to disaffection and problems of morale which can cripple the organization.[1]

In order to test for the possible relationships suggested above to examine the assumption of linearity, the Mach scores of all eighty principals were rank ordered and divided into six groups from extremely high

[1]Richard Christie and Florence Geis, Studies in Machiavellianism (New York: Academic Press, 1970), p. 357.

Machs to extremely low Machs. Then, analyses of variance were performed for each of the major dependent variables of the study. The results were the same as the correlational analyses; there were no significant relationships between Machiavellian orientation and initiating structure, consideration, effectiveness, authoritarianism, emotional detachment, principal loyalty, school loyalty, and openness. Furthermore, there was no significant deviation from linearity for any of the relationships; hence, the assumption of linearity was supported.

Further Analyses of the Hypotheses

The underlying assumption on which all the hypotheses were built was that the school context provided a loosely structured situation in which the school principal engaged in face-to-face interaction with his staff, had ample opportunity to engage in innovative behavior and improvisation, and was faced with a complex and highly affective situation. Further, it was assumed that, in general, the exact role behaviors of principals and teachers were not rigidly defined, that usually the exact means to achieve goals were not clearly predefined, and that the principal's role typically was one where improvisation was necessary. These are conditions under which a Machiavellian orientation apparently makes a difference. However, the fact that the Machiavellian orientation of principals was related neither to principal behavior nor to faculty reaction raises some question about the validity of this general set of assumptions.

Perhaps, there were major differences in the social milieu of the schools which moderated the hypothesized relationships. That is, certain patterns of principal-teacher interactions may produce a school climate which either facilitates or constrains the "acting out" of Machiavellian orientations of principals. One index of the social climate of the school was the measure of openness. Given the lack of relationship between Machiavellian orientation of principals and their behavior, it was decided to examine separately the hypothesized relations for "open" and "closed" elementary and secondary schools. This procedure provided a test of the possible influence of organizational climate as a moderating variable between Machiavellian orientation and aspects of principal behavior.

Elementary schools were rank ordered in terms of their openness scores. Then the group was dichotomized; the twenty most "open" schools were designated as "open" in climate, and the twenty most "closed" schools were designated as "closed" climates. The same procedure was used for the secondary schools. The climate of the school, in terms of openness, appeared not to be an important moderating variable. In general, the relationships between Machiavellianism and the major variables were not changed significantly. Most of the correlation coefficients were small and insignificant. In "open" elementary schools, there was a significant negative correlation between authoritarianism and Machiavellianism--the greater the Mach score, the less authoritarian the principal. Furthermore, in all "open" schools, consideration was negatively related to Machiavellianism. The results are summarized in Table 3.

A Search for Moderating Variables

In order to analyze systematically the moderating influence of other variables on the relationship between Machiavellian orientation of the principal and his leader behavior as described by teachers, a series of multiple regression analyses was performed. Age of principal, administrative experience, school size, favorableness of the situation (Esprit-Disengagement), loyalty to the principal, and loyalty to the school were tested as possible moderators with respect to the relationship between Machiavellian orientation and aspects of behavior including initiating structure, consideration, authoritarianism, emotional detachment, and leader effectiveness.

The moderating effect was tested by using multiple regression techniques where the Mach score, moderating variable, and their cross-product were the three predictors in each run. To test for a significant interaction effect, the main effects must be controlled first; hence, the Mach score and moderating variable were entered into the regression equation. Then, the cross-product term was added. The increase in R^2 caused by adding the cross-product term indicated the strength of the interaction effect.[2] The significance

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[2]For further discussion see Herbert Wallberg, "Generalized Regression Models in Educational Research," American Educational Research Journal, VIII (January, 1971), pp. 71-91.

TABLE 3

CORRELATION COEFFICIENTS BETWEEN MACHIAVELLIAN ORIENTATION AND MAJOR VARIABLES WITH "OPENNESS" OF SCHOOL CLIMATE AS A MODERATOR

Variable	"Open" Elementary Schools (n=20)	"Closed" Elementary Schools (n=20)	"Open" Secondary Schools (n=20)	"Closed" Secondary Schools (n=20)	All "Open" Schools (n=40)	All "Closed" Schools (n=40)
Initiating Structure	-.28	-.21	-.22	-.09	-.15	-.24
Consideration	.22	-.05	-.34	-.43	-.36*	.04
Effectiveness	-.01	.00	-.11	-.39	-.26	-.01
Authoritarianism	-.55**	.09	-.26	.21	.07	-.13
Emotional Detachment	.13	.05	.21	.11	.14	.02
Principal Loyalty	.13	-.02	.24	-.32	-.10	.02
School Loyalty	-.04	.18	-.15	-.24	-.20	.07

**p < .01
*p < .05

of the increase on R^2 produced by adding the cross-product term was tested using the following F-ratio:

$$F = \frac{\left(R^2_{Y.M,A,MXA} - R^2_{Y.M,A}\right)}{\left(1 - R^2_{Y.M,A,MXA}\right)} \frac{(N-4)}{}$$

Where M = Mach Score and A = Potential Moderating Variable

In all, ninety multiple regression analyses were performed--thirty for the elementary school principals, thirty for the secondary principals, and thirty for the combined group of principals.[3] There were no significant interaction effects for either the elementary school principals or for all school principals taken as a group. In the secondary schools, there was only significant interaction. Administrative experience served to moderate the relationship between Machiavellianism of the principal and loyalty of the teacher to the principal. For principals with less experience, there was a correlation of -.46 between Machiavellianism and loyalty to the principal; but for more experienced principals, the correlation was a positive .19. The difference between these correlations was statistically significant. In summary, however, the search for possible moderating variables was not highly productive.

Leadership "Effectiveness" and Machiavellianism: A Two-Way Analysis

One of the major differences in studying Machiavellianism in the laboratory and in the world beyond the walls of the laboratory is the lack of control of studies in the latter category. In the real world, the potential number of uncontrolled variables and variables interacting with Machiavellianism is large. Given the lack of success in confirming straight-forward

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[3]Given the six possible moderating variables and the five aspects of principal behavior, thirty combinations were possible for <u>each</u> group, ninety combinations in all.

predictions concerning Machiavellianism, it was decided to attempt a more complex analysis in which several variables and Machiavellianism were analyzed simultaneously.

Halpin has indicated that the major dimensions of leadership behavior are initiating structure and consideration.[4] Furthermore, several studies have supported the conclusion that effective leader behavior tends to be associated with high performance on both dimensions.[5] Therefore, it was decided to examine the concurrent relationship between initiating structure, consideration, and Machiavellianism. In order to perform this analysis, a two-way analysis of variance was performed. The total sample of principals was divided into the following four quadrants: (1) those above the mean on both initiating structure and consideration, (2) those below the mean on both initiating structure and consideration, (3) those above the mean on initiating structure but below the mean on consideration, and (4) those above the mean on consideration but below the mean on initiating structure. Then, analysis of variance was performed by comparing the Mach scores in these four quadrants. The analysis again showed that neither initiating structure nor consideration by itself was significantly related to Machiavellianism; however, there was a significant interaction of these variables with respect to Machiavellianism. Higher Machs tended to be in either the quadrant with high scores on both dimensions or low scores on both dimensions; that is, in the quadrants associated with highly effective leadership or highly ineffective leadership. Lower Machs tended to be in the "off" quadrants--quadrants high on one dimension but low on the other. These data are summarized in Tables 4 and 5.

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[4]Andrew W. Halpin, Theory and Research in Administration (New York: Macmillan Company, 1966), pp. 97-98.

[5]Ibid., pp. 93-98. See also John K. Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," The Journal of Educational Psychology, XLVI (November, 1955), pp. 385-401; and Andrew W. Halpin, Leader Behavior of School Superintendents (Chicago: Midwest Administration Center, University of Chicago, 1959).

TABLE 4

MEAN PRINCIPAL MACH SCORES AS RELATED TO INITIATING STRUCTURE AND CONSIDERATION

Consideration	Initiating Structure: High	Initiating Structure: Low	Total
High	98.74 (n=27)	96.22 (n=18)	97.73
Low	96.27 (n=15)	101.50 (n=20)	99.26
Total	97.86	99.00	

TABLE 5

TWO-WAY ANALYSIS OF VARIANCE: THE RELATIONSHIP OF INITIATING STRUCTURE AND CONSIDERATION TO MACHIAVELLIANISM

Source of Variation	Degrees of Freedom: Num.	Degrees of Freedom: Denom.	Squares	F	P
Initiating Structure (IS)	1	77	6029.49	.21	ns
Consideration (C)	1	77	6049.14	.46	ns
Interaction (ISXC)	1	76	6013.39	3.18	.05

Machiavellianism and Demographic Characteristics: Some Comparisons

The data of the present study also provided a basis for exploring relationships between Machiavellian orientations of principals and their age, administrative experience, teaching experience, and the size of their school in terms of numbers of teachers and pupils. None of these relationships, however, was statistically significant (See Table 6).

TABLE 6

CORRELATION COEFFICIENTS BETWEEN MACHIAVELLIANISM AND SELECTED DEMOGRAPHIC VARIABLES

Variable	All Principals (n=80)	Elementary Principals (n=40)	Secondary Principals (n=40)
Administrative Experience (Total)	.03	.21	-.12
Administrative Experience (Present School)	.11	.12	.11
Teaching Experience	.06	-.16	.18
Age	.14	.03	-.04
Number of Pupils	-.03	.03	-.12
Number of Teachers	-.02	.10	-.14

Christie and Geis provide a description and analysis of demographic and social correlates of Machiavellianism in several samples.[6] They found that when comparing a diverse sample of college students with a representative sample of non-institutionalized adults (Amalgam Survey of the National Public Opinion Center, 1963), the college students clearly scored substantially higher on Machiavellianism than the adults in the NORC sample. Furthermore, Christie and Merton have reported that older persons who might be expected to be highly manipulative, such as Washington lobbyists or business executives, scored lower on the Mach items than did college students.[7] A comparison of the Mach scores on the principals in the present sample with other samples indicated that school principals did not score lower on the Mach scale than any of the samples reported by Christie and his associates. See Table 7. Christie and Geis' notion that "older persons in general score lower on Mach than do college students . . ." was not supported by the present data.[8]

Several other questions were posed concerning the relationship between Machiavellianism and other demographic characteristics.

> Is Machiavellianism of the principal related to the kind of undergraduate college attended?
>
> Is Machiavellianism of the principal related to job mobility?
>
> Is Machiavellianism of the principal related to the community the principal works in?

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[6]Christie and Geis, op. cit., pp. 314-338.

[7]Richard Christie and Robert Merton, "Procedures for the Sociological Study of the Values Climate of Medical Schools," in Helen Gee and R. J. Glaser (eds.), The Ecology of the Medical Student (Evanston, Ill.: American Association of Medical Colleges, 1958).

[8]Christie and Geis, op. cit., p. 315.

TABLE 7

COMPARISONS OF MACH SCORES FOR VARIOUS SAMPLES

Sample	Mach V Score
College	97.24
Adult NORC	92.26
Elementary Principals	98.05
Secondary Principals	98.75
All Principals	98.40

Christie and Geis have suggested that respondents from teachers colleges have very low Mach scores.[9] Hence, it was decided to compare the Mach scores of principals who did their undergraduate work in teachers colleges with those who were liberal arts graduates. The mean Mach scores for the two groups were virtually the same ($\bar{X}$ = 98.88 and 98.41 respectively, F = .06). Similarly, when graduates of public and private colleges were compared, the results were also identical ($\bar{X}$ = 98.36 and 98.44 respectively, F = .00). These data are summarized in Tables 8 and 9.

In general, there have been few positive correlations between social mobility and Mach scores; however, in the present study, we were interested in Machiavellianism and job mobility. Several indices were developed for job mobility. First, principals were grouped in terms of the number of school systems in which they had been employed during their career. The mean Mach scores of the three groups of principals were then examined by analysis of variance techniques. There was a significant tendency for more mobile principals to be more Machiavellian. The data are summarized in Table 10.

[9]Christie and Geis, op. cit., pp. 325-326.

TABLE 8

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM AND TYPE OF COLLEGE -- LIBERAL ARTS OR TEACHERS COLLEGE

	Liberal Arts	Teachers College
Number	44	34*
Mean	98.41	98.88
Standard Deviation	9.35	7.97

Source	df	SS	MS	F
Between Groups	1	4.30	4.30	.07 (ns)
Within Groups	76	5854.15	77.03	
Total	77	5858.45		

*Data were missing on some respondents; hence, the total number is not eighty.

TABLE 9

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM AND TYPE OF COLLEGE -- PUBLIC OR PRIVATE

	Public	Private
Number	44	36
Mean	98.36	98.44
Standard Deviation	9.29	8.21

Source	df	SS	MS	F
Between Groups	1	.13	.13	.00 (ns)
Within Groups	78	6075.06	77.89	
Total	79	6075.19		

TABLE 10

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM AND JOB MOBILITY

		One School	Two Schools	Three or More Schools
Number		25	23	32
Mean		94.80	99.13	100.69
Standard Deviation		7.98	9.38	8.25
Source	**df**	**SS**	**MS**	**F**
Between Groups	2	503.72	251.86	3.48*
Within Groups	77	5571.48	72.36	
Total	79	6075.20		

*$p < .05$

A more refined index of job mobility was also devised. Principals were divided into two extreme groups--"locals" and "cosmopolitans." Locals were defined as principals who had long tenure (more than ten years) in only one or two districts. Cosmopolitans were designated as those who had short tenure (a total of less than ten years) in three or more school districts. Analysis of variance indicated that the cosmopolitans were significantly more Machiavellian than the locals ($\bar{X}$ = 103.38 and 97.36 respectively, $F = 4.23$, $p < .05$). These data are summarized in Table 11.

One final analysis was performed. Machiavellianism scores of principals working in different types of community contexts were compared. There were no significant differences in Mach scores between principals employed in urban centers, urban-suburban, and suburban schools ($\bar{X}$ = 96.36, 99.36, and 98.36 respectively, $F = .44$, n.s.). See Table 12.

TABLE 11

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM AND LOCAL-COSMOPOLITAN ORIENTATION

	Local	Cosmopolitan
Number	25	16
Mean	97.36	103.38
Standard Deviation	9.29	9.03

Source	df	SS	MS	F
Between Groups	1	352.98	352.98	4.23*
Within Groups	39	3251.51	83.37	
Total	40			

*p < .05

TABLE 12

SUMMARY DATA AND ANALYSIS OF VARIANCE DATA FOR THE RELATIONSHIP BETWEEN MACHIAVELLIANISM AND TYPE OF COMMUNITY

	Urban Center	Urban-Suburban	Suburban
Number	11	25	44
Mean	96.36	99.36	98.36
Standard Deviation	11.89	9.67	7.39

Source	df	SS	MS	F
Between Groups	2	68.71	34.36	.44 (ns)
Within Groups	77	6006.47	78.01	
Total	79	6075.18		

CHAPTER V

SUMMARY, DISCUSSION, AND CONCLUSIONS

The present research focused on the relationships among Machiavellian orientations of principals, the leader behavior of principals, and characteristics of the faculty. In earlier chapters of this report, the major concepts of the study were introduced along with a review of the pertinent literature and the theoretical framework, hypotheses, and questions that guided the research. The procedures and methodology of data collection and analysis were also described. The purpose of this chapter is to summarize the findings, discuss their implications, propose possible areas for further research, and draw conclusions.

Summary of Findings

Seven hypotheses and three research questions provided the guide for the empirical phase of the study. The results of the tests for all principals are summarized below:

1. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' perception of his initiating structure.

2. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' perception of his consideration.

3. There was no significant relationship between the Machiavellian orientation of a school principal and ratings of his effectiveness by teachers.

4. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' perception of authoritarianism in his behavior.

5. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' perception of his emotional detachment.

6. There was no significant relationship between the Machiavellian orientation of a school principal and the amount of loyalty commanded from teachers.

7. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' perception of the openness in the organizational climate of the school.

8. There was no significant relationship between the Machiavellian orientation of a school principal and the teachers' loyalty to the school.

9. There was no significant relationship between the Machiavellian orientation of the principal and his administrative experience.

10. There was no significant difference between the Machiavellian orientations of elementary and secondary school principals.

The relationships were also tested separately for elementary school principals and for secondary school principals. The results were nearly the same; in fact, there was only one difference. For secondary principals, the greater the degree of Machiavellianism of principals, the less the teachers described the principal as considerate. Although the relationship was not predicted, it was a moderate and significant one ($r = -.36$, $p < .05$).

Since so few significant relationships emerged between Machiavellianism and the major variables of the study, it was decided to examine the data for variables which might moderate the predicted relationships. Openness of the school climate was identified as such a variable. The relationships were tested in "open" and "closed" elementary and secondary schools. Again, most of the correlation coefficients were small and statistically insignificant.

In order to search more systematically for moderating variables, a series of multiple regression analyses was performed. The moderating effect was tested by using multiple regression techniques where the Mach score, potential moderating variable, and cross-product were the three predictors in each run. To test for a significant interaction effect, the main effects were entered first into the regression equation, and then the cross-product term was added. A significant cross-product (interaction) effect indicated a moderating influence. The fruits of this series of analyses were also negligible. Only administrative experience served to moderate the relationship between Machiavellianism of the principal and loyalty of the teacher to the principal. For principals with less experience, there was a correlation of -.46 between Machiavellianism and teacher loyalty to the principal; but for more experienced principals, the correlation was a positive .19. The difference between these correlations was statistically significant.

A two-way analysis of variance provided some evidence that the relationship between Machiavellianism, initiating structure, and consideration was a complex one. Although neither initiating structure nor consideration by itself was related to the principal's Machiavellianism, together there was a significant interaction of these variables with respect to Machiavellianism. Higher Machs tended to be in either the quadrant with high scores on both dimensions or low scores on both dimensions.

Finally, a series of analyses was performed exploring the relationships between Machiavellianism and selected demographic characteristics. Machiavellianism of principals was not significantly related to age, teaching experience, school size, type of undergraduate education, or to the type of community in which the principal was working. However, Machiavellianism of the principal was statistically related to job mobility and an index of local-cosmopolitan orientation. The more Machiavellian the orientation of the principal, the more job mobility he was found to exhibit. Furthermore, cosmopolitans were significantly more Machiavellian than locals. Finally, the present sample of administrators, compared to other occupational groups, appeared to be quite Machiavellian.

Discussion and Questions

The most striking feature of the present findings was the lack of consistent relationships between Machiavellianism of principals and the other variables. The experimental research on Machiavellianism had indicated that high Machs and low Machs did behave differently in the laboratory setting. A basic assumption of this research was that there would be correspondence between behaviors elicited in controlled laboratory settings and those occurring under the control of forces in the real world. Furthermore, it was assumed that the school setting provided principals with relatively open-ended situations characterized by face-to-face contact, much latitude for improvising behavior, and an affectively complex situation. These are the conditions in the laboratory which facilitate Machiavellian behavior.

Nevertheless, most of the hypotheses of this study were not supported; in fact, only two of the seven hypotheses were supported, and these were the two predicting "no relationship" with Machiavellianism. Why the stark contrast between the present results and the experimental findings? Perhaps, one or both of the preceding assumptions are untenable.

The vast majority of research studies utilizing the concept of Machiavellianism have been conducted with college students in controlled, laboratory settings. Christie and Geis themselves recognize the difficulty of attempting to generalize from the laboratory paradigm to the real world. There simply may not be enough detailed information about the relative degree and kind of face-to-face contact, latitude for improvisation, and arousal of irrelevant affect in field situations to be precise in analyzing their influence.[1] These conditions were assumed to be operative in large measure for the principal in the school. When the anticipated relationships were not confirmed, an attempt was made to differentiate schools on the basis of school structures more and less likely to exhibit these conditions; therefore, schools were dichotomized in terms of organizational climate into "open" and "closed" schools. However, the results were basically the same; none of the hypotheses predicting a relationship with Machiavellianism was

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[1]Richard Christie and Florence Geis, Studies in Machiavellianism (New York: Academic Press, 1970), p. 348.

confirmed. Furthermore, a systematic search for moderating variables, ones which moderate the relationships between Machiavellianism and the dependent variables, was largely unproductive. These results suggest that most of the hypothesized relationships involving Machiavellianism either do not exist in the school contexts studied or they have been confounded by other uncontrolled variables in the real world.

With respect to the latter point, Christie and Geis have noted:

> . . . other variables exist in natural settings and we do not know the relative importance of the interaction between known and unknown variables. Interaction effects are stronger than main effects in many experiments. The same is undoubtedly true in the real world, and the problem of interpretation is confounded when known variables interact with others of unknown nature and strength.[2]

The two-way analysis of variance which was performed to explore the relationship among initiating structure, consideration, and Machiavellianism tends to substantiate this conclusion. The analysis clearly showed that neither initiating structure nor consideration by itself was significantly related to Machiavellianism; however, there was a significant interaction of these variables with respect to Machiavellianism. Higher Machs tended to have either higher scores on both leadership dimensions (initiating structure and consideration) or lower scores on both dimensions. One interpretation of these findings is that high Machs are either very successful or very unsuccessful. What are the conditions which lead to "success" or "failure" for high Machs? Are there different "types" of high Machs? These are two research questions which seem potentially significant.

Another factor which may have influenced the findings of this study was New Jersey Public Law 303, a relatively recent law which gives public employees (teachers) the right to negotiate the terms and conditions of their employment with their employers (Board of Education). Perhaps, the advent of P.L. 303 has altered the kind and the degree of teacher-principal

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[2] Ibid., p. 344.

relations more significantly than was assumed in the present study. That is, the consequences of the law may have limited the latitude for action of public school principals by structuring behavior patterns so that there is relatively little opportunity for flexible and innovative behavior by the principal. Indeed, Christie and Geis argue that the use of Machiavellian tactics enhances the exercise of legitimate power only if the rules of the social system are not so tightly structured that there is little opportunity for improvisation.[3] The extent to which the law has produced a more rigid structure in the state remains an open question.

However, in any future attempt to explore Machiavellian orientations of administrators as related to administrative behavior, it would probably be advisable to include in the design specific operational indices for the three situational characteristics hypothesized by Christie and Geis to be especially relevant for the implementation of Machiavellian tactics; namely:

1. face-to-face interaction
2. latitude for improvisation
3. arousing irrelevant affect

In this way, one would be able to begin to test the extent to which the bureaucratic structure of a school moderates the relationships between Machiavellianism of the principal and aspects of leader behavior. More specifically, in schools which are loosely structured are high Mach principals able to operate successfully? Or, are schools, in general, too structured for the effective implementation of Machiavellian tactics?

In addition to testing the hypotheses and research questions, a series of supplementary analyses provided some interesting findings and delineated some further areas for research. Christie and Geis, in their analysis of Mach scores of various groups, have noted that older persons who might be expected to be highly manipulative, such as Washington lobbyists or business executives, scored lower on Mach items than college students and, further, that college students also scored higher on

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[3] Ibid., p. 343.

Mach V items than a representative sample of non-institutionalized adults within the United States; in fact, they concluded that the data ". . . supports the notion that older persons in general score lower on Mach than do college students."[4] The principals in the present sample, however, scored higher on the Mach V scale than the sample of college students reported by Christie and Geis. This finding is especially intriguing since Christie and Geis also reported that "Elementary and secondary school teachers who have been tested score considerably lower than most other occupational groups; professionals tend to score high."[5] Since almost without exception school principals are drawn from the ranks of elementary and secondary teachers, several questions arise. Why are public school principals in the present sample so Machiavellian? Do they become increasingly more Machiavellian after becoming principal, or do they become principals because they are Machiavellian? The data of the present study suggest that administrative experience is not significantly related to Machiavellianism. Since school superintendents typically have been principals, how Machiavellian are public school superintendents?

It has also been suggested that Mach V scores tend to be lowest among samples of respondents from church-related schools and from teachers colleges. However, in the present sample, there was no significant difference between the Mach scores of principals who had attended teachers colleges and those who had attended liberal arts colleges. Similarly, and again contrary to other findings, age of principals was not negatively related to Machiavellianism. Perhaps, the reason for these findings is related to the fact that New Jersey is a highly urbanized state, and urbanization and Machiavellianism are positively associated.[6]

Generally speaking, there were few significant relationships between the demographic characteristics of principals and Mach scores. The major exception dealt with several aspects of job mobility. Principals who had been employed in a larger number of school districts in their career tended to be significantly

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[4]Ibid., p. 314.

[5]Ibid., p. 354.

[6]Ibid., p. 326.

more Machiavellian than those employed in only a few districts. Furthermore, those principals with long tenure in only one or two districts, "locals," tended to be less Machiavellian than those principals with shorter tenure in many districts, "cosmopolitans." The findings raise several questions. Do principals who are high Machs move more frequently because they are upward mobiles (i.e. because they want to) or because they have to move?

Carlson's analysis of administrators suggested that place-bound administrators were more limited in their influence on organizational change than career-bound administrators. To what extent is Machiavellianism of principals related to change? Under what conditions do high and low Machs act as change agents? Are high Machs more effective change aspects than low Machs? In brief, the findings of this study raised more questions than they answered.

Concluding Statement

The primary purpose of this study was to explore the relationships between Machiavellianism of elementary and secondary school principals and aspects of teacher-principal interactions. Although there had been little study of Machiavellianism in the public school setting, there was a substantial body of research on Machiavellianism studied in the controlled setting of the laboratory. The evidence from that research strongly supported the notion that individuals who scored higher and lower on the Mach Scales behave differently, especially in situations requiring improvisation and where role behaviors are not rigidly structured. More specifically, the experimental research evidence indicated that high Machs manipulate more, win more, are persuaded less, and persuade others more than low Machs. High Machs are markedly less likely to become emotionally involved with other people, with sensitive issues, or in different situations. They tend to focus on explicit, cognitive definitions of the situation and strategies for succeeding. Furthermore, they are more often preferred as partners, chosen as leaders, judged as more pervasive, and seem to direct and control the tone, substance, and usually the outcome of interaction;

however, they do not appear to be more hostile, vicious, or vindictive compared with low Machs.[7]

These findings in the experimental literature led to a series of hypotheses and questions which guided the present research in the school context; however, the results of this study stand in contrast to the experimental results. In general, Machiavellian orientation of the principal was found not to be related to the variety of aspects of teacher-principal relations explored in this investigation; in fact, the striking feature of the present results was the consistent lack of systematic relationship between Machiavellianism and the dependent variables.

The findings of the study do not lead to any definitive conclusions on Machiavellianism of principals and teacher-principal relations. Rather, several hypothetical explanations might be offered. First, contrary to the findings of the experimental research, the relationship between Machiavellian orientations of principals, as measured by the Mach V Scale, and aspects of teacher-principal interactions may simply not exist in the school setting. The school context, in general, may not produce a situation conducive to the implementation of a Machiavellian orientation. Furthermore, high Machs in the experimental studies achieved their success in a short time period, usually less than a few hours, and in small group situations. Whether or not most high Machs have the ability to adopt their tactics successfully over a long period of time in an organizational context remains an open question.

Another possible explanation of the findings seems plausible. Although the present explorations did not lead to a situational variable which served as a moderator, it is possible that the careful development of indices to measure crucial aspects of the situation (face-to-face interaction, latitude for improvisation, and arouser of irrelevant affect) might provide for the identification of a situational variable which does moderate the Machiavellian relationships. That is, in one type of situation the high Mach may be successful while in other situations the low Mach may achieve success. Further, the relationships between Machiavellian

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[7]Christie and Geis, op. cit., pp. 285-313.

principals and aspects of teacher-principal interactions may be exceedingly complex in the real world. The interaction effects of the variables may be stronger than the main effects. The interaction result with respect to consideration, initiating structure, and Machiavellianism supports this conjecture. It seems safe to conclude that only through further research will the answers to these speculations emerge.

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APPENDIX A

CHARACTERISTICS OF SCHOOLS AND COMMUNITIES

School Number	Professional Staff Size	Character of Community[1]	Population Density (per sq. mi.)[1]	Population Change in Percent (1960-1970)[1]	Equalized Valuation Per Pupil[2]
1	21	S	2012.0	50.0	$54,845
2	13	S	3978.6	10.5	56,502
3	22	S	3026.9	8.8	82,031
4	20	S	3941.7	34.7	51,402
5	17	U-S	8364.8	7.4	53,208
6	18	S	2421.6	20.5	45,072
7	13	S	3978.6	10.5	56,502
8	13	S	1834.1	18.9	76,855
9	20	S	2012.0	50.0	54,845
10	30	S	5897.4	3.1	92,401
11	29	U-C	17,771.3	-5.7	28.358
12	25	S-R	168.4	12.6	86,150
13	26	S	2421.6	20.5	45,072
14	22	S	5897.4	3.1	92,401
15	21	S	1079.2	12.1	78,140
16	34	U-C	7278.5	5.1	52,504
17	20	U-S	8364.8	7.4	53,208
18	22	U-S	6995.0	10.1	47,536
19	22	S	3941.7	34.7	51,402
20	16	U-S	6285.6	4.9	59,223
21	12	U-S	10,982.3	13.8	47,218
22	28	U-C	7278.5	5.1	52,504

School Number	Professional Staff Size	Character of Community[1]	Population Density (per sq. mi.)[1]	Population Change in Percent (1960-1970)[1]	Equalized Valuation Per Pupil[2]
23	17	U-S	2307.0	9.9	$95,439
24	14	S	2358.5	43.0	59,722
25	25	S	5590.0	3.7	51,151
26	16	S	5590.0	3.7	51,151
27	19	S	2012.0	50.0	54,845
28	20	S	1070.2	12.1	78,140
29	26	U-C	7810.3	3.4	35,031
30	30	U-C	7810.3	3.4	35,031
31	25	S	3612.8	9.6	54,384
32	14	S	2130.7	13.3	105,659
33	25	S-R	342.8	105.1	41,838
34	16	S-R	342.8	36.8	42,327
35	25	S	2742.1	22.1	79,994
36	15	U-S	3936.7	-0.2	77,310
37	20	U-C	7278.5	5.1	52,504
38	14	S	2130.7	13.3	105,659
39	20	U-S	8364.8	7.4	53,208
40	23	S	2412.6	20.5	45,072
41	87	S	2130.7	13.3	105,659
42	134	U-S	7165.1	4.3	59,135
43	52	U-S	7165.1	4.3	59,135
44	77	U-S	7165.1	4.3	59,135
45	74	U-S	7265.8	25.6	59,722
46	67	S	2130.7	13.3	105,659
47	72	S	2159.9	30.3	55,195
48	50	S	2159.9	30.3	55,195
49	55	U-S	7178.8	0.6	62,163

School Number	Professional Staff Size	Character of Community[1]	Population Density (per sq. mi.)[1]	Population Change in Percent (1960-1970)[1]	Equalized Valuation Per Pupil[2]
50	62	U-S	7178.8	0.6	$62,163
51	58	S	2268.0	115.6	49,431
52	122	S	2268.0	115.6	49,431
53	90	S	2268.0	115.6	49,431
54	43	S	3612.8	9.6	54,384
55	100	S	2215.5	54.3	51,163
56	45	S	3612.8	9.6	54,384
57	50	U-S	12,800.0	12.5	48,312
58	61	U-S	5898.0	5.5	66,342
59	126	U-S	9666.7	6.6	46,905
60	75	S	942.0	76.6	82,770
61	126	S	1926.9	83.1	47,861
62	150	U-C	21,236.8	0.6	46,904
63	50	U-S	4669.0	8.5	54,793
64	76	U-S	4669.0	8.5	54,793
65	65	U-S	9635.0	0.3	55,332
66	101	U-S	4283.3	25.5	50,242
67	130	S	1831.8	98.1	59,885
68	70	U-C	7278.5	5.1	52,504
69	87	U-S	8013.3	-3.0	65,783
70	60	U-S	9635.0	0.3	55,332
71	125	U-S	4041.4	0.3	76,242
72	157	U-C	17,771.3	-5.7	28,358
73	82	U-C	40,932.1	19.8	24,395
74	150	S	5897.4	3.1	92,401
75	64	S-R	210.1	63.9	63,738

School Number	Professional Staff Size	Character of Community[1]	Population Density (per sq. mi.)[1]	Population Change in Percent (1960-1970)[1]	Equalized Valuation Per Pupil[2]
76	55	U-S	7238.4	3.5	$84,113
77	52	U-S	5827.8	8.2	51,411
78	151	S	1539.0	71.1	36,183
79	52	S	1390.9	65.3	78,562
80	82	U-C	7278.5	5.1	52,504

[1]Source: New Jersey Municipal Profiles - Intensity of Urbanization, New Jersey Department of Community Affairs, PT-6, January, 1972.

(Character Code - S=Suburban, U-S=Urban Suburban, U-C=Urban Center, S-R=Suburban Rural.)

[2]Source: Twenty-first Annual Report of the Commissioner of Education, New Jersey State Department of Education, 1971-72.

APPENDIX B

OPERATIONAL MEASURES

I. Leader Behavior Description Questionnaire[1]

Directions:
1 - READ each item carefully.
2 - THINK about how often your principal engages in the behavior described by the item.
3 - DECIDE whether he (A) always (B) often (C) occasionally (D) seldom or (E) never acts as described by the item.
4 - DRAW A CIRCLE around ONE of the five letters (A B C D E) following the item to indicate the answer you have selected. A=always B=often C=occasionally D=seldom E=never

A. Initiating Structure

1. He makes his attitude clear to the staff.	A	B	C	D	E
2. He rules with an iron hand.	A	B	C	D	E
3. *He works without a plan.	A	B	C	D	E
4. He assigns staff members to particular tasks.	A	B	C	D	E
5. He tries out his new ideas with the staff.	A	B	C	D	E
6. He maintains definite standards of performance.	A	B	C	D	E
7. He criticizes poor work.	A	B	C	D	E
8. He makes sure that his part in the school is understood by both teachers and students.	A	B	C	D	E

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[1]Developed at the Center for Business and Economic Research, Division of Research, College of Administrative Science, Ohio State University.
*Score is reversed.

9.	He sees to it that staff members are working to capacity.	A	B	C	D	E
10.	He sees to it that the work of staff members is coordinated.	A	B	C	D	E
11.	He asks that staff members follow standard rules and regulations.	A	B	C	D	E
12.	He lets staff members know what is expected of them.	A	B	C	D	E
13.	He encourages the use of uniform procedures.	A	B	C	D	E
14.	He emphasizes the meeting of deadlines.	A	B	C	D	E
15.	He speaks in a manner not to be questioned.	A	B	C	D	E

B. <u>Consideration</u>

1.	He does little things to make it pleasant to be a member of the staff.	A	B	C	D	E
2.	He puts suggestions made by the staff into operation.	A	B	C	D	E
3.	He is friendly and approachable.	A	B	C	D	E
4.	He is willing to make changes.	A	B	C	D	E
5.	He treats all staff members as his equals.	A	B	C	D	E
6.	He looks out for the personal welfare of the individual staff members.	A	B	C	D	E
7.	*He refuses to explain his actions.	A	B	C	D	E
8.	He is easy to understand.	A	B	C	D	E
9.	He does personal favors for staff members.	A	B	C	D	E

10. He gets staff approval on important matters before going ahead. A B C D E

11. *He keeps to himself. A B C D E

12. *He acts without consulting the staff. A B C D E

13. He makes staff members feel at ease when talking with them. A B C D E

14. *He is slow to accept new ideas. A B C D E

15. He finds time to listen to staff members. A B C D E

II. Authoritarianism

Directions:
1 - READ each item carefully.
2 - THINK about how often your principal engages in the behavior described by the item.
3 - DECIDE whether he (A) always (B) often (C) occasionally (D) seldom or (E) never acts as described by the item.
4 - DRAW A CIRCLE around ONE of the five letters (A B C D E) selected. A=always B=often C=occasionally D=seldom E=never.

1. He rules with an iron hand. A B C D E

2. He is strict as opposed to lenient. A B C D E

3. He supervises closely rather than letting subordinates work on their own. A B C D E

4. He refuses to explain his actions. A B C D E

5. He has an approach to students which does not indicate a professional orientation. A B C D E

6. He has an authoritarian approach. A B C D E

7. *He is friendly in his relationship with subordinates. A B C D E

8. He speaks in a manner not to be questioned. A B C D E

III. Emotional Detachment

Directions:
1 - READ the item carefully.
2 - THINK about how often your principal engages in the behavior described by the item.
3 - DECIDE whether he (A) always (B) often (C) occasionally (D) seldom or (E) never acts as described by the item.
4 - DRAW A CIRCLE around ONE of the five letters (A B C D E) selected. A=always B=often C=occasionally D= seldom E=never

1. *When things don't go smoothly, he is likely to lose his temper or get excited. A B C D E

IV. Organizational Climate Dimensions[2]

Directions:
Following are some statements about the school setting. Please indicate the extent to which each statement characterizes your school or principal by circling the appropriate response.
RO = RARELY OCCURS
SO = SOMETIMES OCCURS
O = OFTEN OCCURS
VO = VERY FREQUENTLY OCCURS

A. Disengagement

1. Teachers seek special favors from the principal. RO SO O VO

2. The mannerisms of the teachers at this school are annoying. RO SO O VO

3. Teachers socialize together in small select groups. RO SO O VO

4. Teachers talk about leaving the school system. RO SO O VO

5. Teachers ask nonsensical questions in faculty meetings. RO SO O VO

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[2]Andrew W. Halpin and Don B. Croft, The Organizational Climate of Schools (United States Office of Education, No. SAE 543-8639, Final Report, 1962).

6.	Teachers exert group pressure on non-conforming faculty members.	RO	SO	O	VO
7.	Teachers at this school stay by themselves.	RO	SO	O	VO
8.	There is a minority group of teachers who always oppose the majority.	RO	SO	O	VO
9.	Teachers interrupt other faculty members who are talking at staff meetings.	RO	SO	O	VO
10.	Teachers ramble when they talk in faculty meetings.	RO	SO	O	VO
B.	Thrust				
1.	The principal tells teachers of new ideas he has run across.	RO	SO	O	VO
2.	The principal is easy to understand.	RO	SO	O	VO
3.	The principal goes out of his way to help teachers.	RO	SO	O	VO
4.	The principal is in the building before teachers arrive.	RO	SO	O	VO
5.	The principal explains his reason for criticism to teachers.	RO	SO	O	VO
6.	The principal uses constructive criticism.	RO	SO	O	VO
7.	The principal is well prepared when he speaks at school functions.	RO	SO	O	VO
8.	The principal sets an example by working hard himself.	RO	SO	O	VO
9.	The principal looks out for the personal welfare of the teachers.	RO	SO	O	VO
C.	Esprit				
1.	Extra books are available for classroom use.	RO	SO	O	VO

2.	The morale of teachers is high.	RO	SO	O	VO
3.	Teachers in the school show much school spirit.	RO	SO	O	VO
4.	There is considerable laughter when teachers gather informally.	RO	SO	O	VO
5.	Custodial service is available when needed.	RO	SO	O	VO
6.	The teachers accomplish their work with great vim, vigor, and pleasure.	RO	SO	O	VO
7.	In faculty meetings, there is the feeling of "let's get things done."	RO	SO	O	VO
8.	Most of the teachers here accept the faults of their colleagues.	RO	SO	O	VO
9.	School supplies are readily available for use in the classroom.	RO	SO	O	VO
10.	Teachers spend time after school with students who have individual problems.	RO	SO	O	VO

V. Loyalty to the Principal[3]

Directions:
Check the one answer in each group which best describes your feeling about the situation described.

1. *If you had a chance to teach for the same pay in another school under the direction of another principal, how would you feel about moving?
   ____a. I would very much prefer to move.
   ____b. I would slightly prefer to move.
   ____c. It would make no difference to me.
   ____d. I would slightly prefer to remain where I am.
   ____e. I would very much prefer to remain where I am.

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[3]Wayne K. Hoy and Leonard B. Williams, "Loyalty to Immediate Superior at Alternate Levels in Public Schools," Educational Administration Quarterly, VII, 2 (Spring, 1971), pp. 3-5.

2. *About how often is your principal responsible for the mistakes in your work unit?

____a. Very often.
____b. Quite often.
____c. Occasionally.
____d. Very rarely.
____e. Never.

3. *Generally speaking, how much confidence and trust do you have in your principal?

____a. Almost none.
____b. Not much.
____c. Some.
____d. Quite a lot.
____e. Complete.

4. Principals at times must make decisions which seem to be against the current interests of their subordinates. When this happens to you as a teacher, how much trust do you have that your principal's decision is in your interest in the long run?

____a. Complete trust.
____b. A considerable amount of trust.
____c. Some trust.
____d. Only a little trust.
____e. No trust at all.

5. If your principal transferred and only you and you alone among the staff were given a chance to go with him (doing the same work for the same pay) how would you feel about making the move?

____a. I would very much feel like making the move.
____b. I would feel a little like making the move.
____c. I would not care one way or the other.
____d. I would feel a little like not moving with him.
____e. I would feel very much like not moving with him.

6. Is your principal the kind of person you really like working for?

____a. Yes, he (she) really is that kind of person.
____b. Yes, he (she) is in many ways.
____c. He (she) is in some ways and not in others.
____d. No, he (she) is not in many ways.
____e. No, he (she) really is not.

7. *All in all how satisfied are you with your principal?
____a. Very dissatisfied with my principal.
____b. A little dissatisfied.
____c. Fairly satisfied.
____d. Quite satisfied.
____e. Very satisfied with my principal.

8. *How much loyalty do you feel toward your principal?
____a. Almost none at all.
____b. A little.
____c. Some.
____d. Quite a bit.
____e. A very great deal.

VI. Loyalty to the School

Directions:
Check the one answer which best describes your feeling about the situation described.

1. How much loyalty do you feel toward your school?
____a. Almost none at all.
____b. A little.
____c. Some.
____d. Quite a bit.
____e. A very great deal.

VII. Leadership Effectiveness

Directions:
Check the one answer which best describes your feeling about the situation described.

1. My principal provides effective leadership. . . .
____a. Almost always.
____b. Most of the time.
____c. Some of the time.
____d. Seldom.
____e. Almost never.

TEACHER'S INFORMATION SHEET

Instructions:

Please complete this form by checking the appropriate spaces and filling in blanks where indicated. Do not write your name anywhere on this form.

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1 - Sex ( ) Male ( ) Female

2 - Marital Status: ( ) Single ( ) Married
( ) Widowed ( ) Divorced

3 - Age: ( ) under 25 ( ) 25-34 ( ) 35-44
( ) 45-50 ( ) over 50

4 - Education: ( ) Baccalaureate
( ) Graduate work (no advanced degree)
( ) Master's Degree
( ) Graduate work beyond the Master's (no advanced degree)
( ) Sixth Year Degree (Specialist)
( ) Presently matriculated in a Doctoral Program

5 - How many years have you taught under the present principal (include the present year) _____.

6 - Total number of years teaching experience (include the present year) _____.

7 - Number of years of teaching experience in this district (include the present year) _____.

8 - Number of years of teaching experience in this school (include the present year) _____.

9 - What is your district's collective bargaining agent?
( ) NJEA local affiliate ( ) Independent
( ) AFT local affiliate ( ) None

10 - Undergraduate Education (Please check ALL appropriate spaces)
( ) A Teachers' College
( ) A Liberal Arts College
( ) A Public College (state or municipal)
( ) A Private College
( ) A College located in New Jersey
( ) A College located outside of New Jersey

PRINCIPAL'S INFORMATION SHEET

Directions:

Listed below are some questions related to you as an individual, or to your school. Please check the appropriate space or fill in the blanks where indicated. Do not write your name anywhere on this form. Thank you.

1 - Sex Male ( ) Female ( )

2 - Age Under 30 ( ) 30-40 ( ) 41-50 ( )

51 or older ( )

3 - Years as principal (include this year) including other schools _____

4 - Years as principal of this school (include this year) _____

5 - Years in teaching prior to becoming principal _____

6 - In how many school systems have you been employed either as teacher or administrator? _____

7 - How many children were there in your family? (Include yourself) _____

8 - How many were boys? _____

9 - Are you the oldest child in your family?
Yes ( ) No ( )

10 - Undergraduate education (please check those that apply)

I attended college in . . .
New Jersey ( ) Some other state ( )
a foreign country ( )
My undergraduate college was
A state or other public college ( )
A private college ( )
The college was primarily a
Liberal Arts College ( )
Teacher Education ( )

11 - My highest earned degree is (please check one)

MA or MS ( )	Ph.D. ( )
MS in ED. ( )	Ed.D. ( )
Educ. Special. ( )	All but the dissertation toward the doctorate ( )

12 - Your school is classified as . . . elementary ( )
secondary ( )

13 - Grade level organization

K-4 ( )	7-9 ( )
K-5 ( )	9-12 ( )
K-6 ( )	10-12 ( )
K-8 ( )	7-12 ( )
1-6 ( )	Other (please specify) _____

14 - School size (number of pupils) _____

15 - School size (number of professional staff) _____

16 - How would you describe the community in which your school is located?

Inner City ( )
Primarily urban ( )
Suburban ( )
Primarily rural ( )